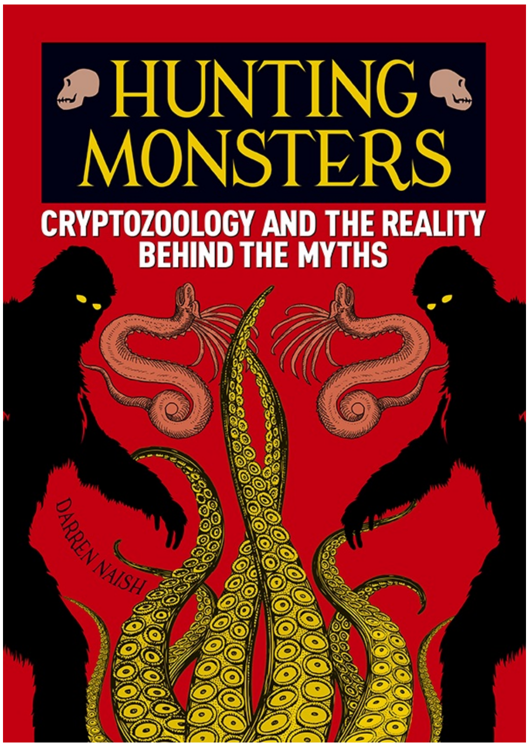

HUNTING MONSTERS

CRYPTOZOOLOGY AND THE REALITY BEHIND THE MYTHS

DARREN NAISH

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Introduction

The Loch Ness monster, bigfoot and the yeti are among the most familiar icons of modern popular culture. Millions of people worldwide have heard of these alleged creatures, and many have gone to the trouble of learning about them. The extraordinary popularity of these mystery creatures – often termed *cryptids* – is obvious from the huge number of books, magazine articles, TV shows and movies devoted to them. These superstar cryptids are so popular, so familiar, that a major portion of interest in world mysteries, in the paranormal and the unexplained is driven specifically by the curiosity that surrounds them. In other words, it's partly thanks to an interest in the Loch Ness monster, bigfoot and so on that such subjects as UFOs, ghosts, reincarnation and telekinesis get the widespread coverage that they do. Cryptids tend to be lumped in with these other subjects, and thus have a bad reputation among scientists and other critical thinkers.

The Loch Ness monster, known as Nessie, is one of the world's most popular cultural icons and has been ever since the 1930s. Over the years, an enormous amount of money has been generated from Nessie-based tourism, books, toys, merchandise, movies and TV shows. This image shows the famous 'Surgeon's photo' or 'Wilson photo'.

On the other hand, the idea that these creatures might really exist inspires many people to think about the reliability of eyewitness evidence as a source of information, and to consider seriously how cryptids might make sense as living, breeding, breathing creatures. The Loch Ness monster, the yeti and so on can introduce people to a broader interest in critical thinking, a scientific view of the world and a curiosity about the natural world and how we interpret it. Seen from this point of view, cryptids might not be a bad thing at all.

Throughout history, people claim to have seen or heard of unusual, often monstrous creatures. Cryptids don't match the animals accepted as real by scientists, and 'mainstream' scientific opinion is that they very probably don't exist. But a dedicated and specialized community of researchers have sought to overturn this view. These people have collected great quantities of eyewitness data pertaining to cryptids and have also come up with a great number of ideas about the sorts of creatures these cryptids might really be, about how they live and behave and about their evolutionary history.

This entire field of research is termed cryptozoology and in this book we'll look at a number of classic 'target creatures' of the field in a critical fashion. One aim of this book is to work out how these alleged creatures are best interpreted. Do they really represent unknown creatures, or can we provide better explanations for their alleged existence? A second aim is to look at why they've been imagined or depicted in the way that they have.

Chapter 1 - What is Cryptozoology?

We’ll start with a quick history. As we’ll see throughout this book, the idea that there might exist a number of large, mysterious creatures – ‘monsters’ – has been present throughout recorded history. At the beginning of the Renaissance (the 15th and 16th centuries), such monsters as dragons, unicorns, mermaids and giants were not regarded as the products of myth or fairytale, but assumed to be flesh and blood creatures awaiting discovery and documentation.

Today, we supposedly have a clear idea as to which creatures are real and which are imaginary or mythical. This boundary was less obvious in the past. Animals like dragons were said or implied to be real, sometimes living in remote places or far-off lands. Relics of their existence were discussed and even displayed in collections of curiosities. People might have given up on the existence of dragons today, but uncertainty about the existence of monsters has never really gone away.

As the centuries passed and knowledge improved, views changed as to which creatures most likely existed and which did not. During the 17th and 18th centuries, unicorns, mermaids and dragons came to be regarded as having been based on confused or exaggerated descriptions of more familiar animals, like antelopes, seals, manatees, lizards, crocodiles and great snakes. And so they ended up disappearing from books and manuscripts on natural history and biology. But other mystery creatures remained in limbo. Even by the end of the 19th century there was no firm ‘official’ opinion on sea monsters, on the water beasts said to lurk in various lakes and rivers, or on more obscure mystery animals like the Queensland tiger of Australia and the hairy, man-like nittaewo of Sri Lanka.

Even if we consider the scientific writings of the early 20th century, we see that learnt people continued to ponder the existence of such creatures. New animals – some of which were surprisingly large – were still being found in many regions of the world, meaning that the existence of such mystery creatures remained a possibility. Gorillas were only officially discovered during the mid 1800s and early 1900s, meaning that the possible existence of gorilla-sized primates elsewhere in the world was by no means dismissed out of hand. The discovery of the Komodo dragon *Varanus komodoensis* in Indonesia in 1912 meant that the existence of other large, undiscovered reptile species also remained plausible.

The several different gorilla species and subspecies are relative latecomers to the zoological scene: the Western lowland gorilla, shown here, was only discovered in the 1840s. However, the 19th century discovery of a giant primate in tropical Africa does not provide strong support for the idea that undiscovered giant primates might also exist, today, in North America.

An important point that emerges from this quick review is that there's never been a time in history when scientists as a whole denounced all interest or belief in mystery creatures. People interested in animals have always been aware of stories about mystery or legendary creatures, and – right up into modern times – have also written about such creatures and gone in search of them. Indeed, there is still today a reasonable amount of mainstream engagement in discussions about mystery creatures. And as we'll see throughout this book, there remain a number of qualified, scientifically trained researchers and writers who still endorse the existence of a diverse array of mystery beasts. Notably, however, the number and diversity of these mystery creatures has reduced over time, as has the number of 'endorsers'. This is a key theme that we'll revisit later.

The world's largest living lizard – the Komodo dragon – was officially discovered in 1912. Its discovery helped fuel the idea, popular among cryptozoologists even today, that giant reptiles might await recognition elsewhere in the world. The notion that the Komodo dragon is some kind of holdover of ancient times is not accurate. It is no more anachronistic than the vast majority of other living animals.

Despite this general interest in mystery creatures, an effort to consider them together in their own area of special research was lacking until the middle of the 20th century. This changed due to the efforts of two individuals. Ivan T. Sanderson was a Scottish-born author, based in the United States, who wrote widely about animals and went in quest of them on a great many expeditions. Sanderson had a special interest in mystery animals and, from the 1940s onwards, wrote books and articles devoted to their consideration. The most famous of these is his 1961 book *Abominable Snowmen: Legend Come to Life*.

Among the many people that Sanderson inspired was Belgian zoologist Bernard Heuvelmans.

Heuvelmans obtained his doctorate by studying the teeth of aardvarks and other mammals. After reading a 1948 article by Sanderson entitled ‘There might be dinosaurs’ that focused on dinosaur-like creatures reported from tropical Africa, he developed a major interest in mystery animals and decided to dedicate his life to their study. He began to collect and analyse literature and correspondence, and by 1955 he’d written the first of several books on the subject. This was *Sur la Piste des Bêtes Ignorées*, published in English in 1958 as *On the Track of Unknown Animals*. This had an enormous international impact and was published in numerous translated versions and later editions.

Heuvelmans went on to publish books on sea monsters, giant squids and octopuses, the alleged survival to the present of Neanderthal man and on the ‘living dinosaurs’ and other mystery animals of tropical Africa. All of these works were published in French and only one or two were ever translated into English. Heuvelmans also produced manuscripts for additional books, some of which never saw print in his lifetime. He also wrote technical papers on mystery animal research, explaining what cryptozoology entailed, how mystery animal reports should be interpreted and which mystery animals were (in his view) worthy of further investigation. Clearly, he was prolific and generated and collated a vast amount of information on mystery animals – more than any other single person.

Heuvelmans corresponded with other researchers, investigators, zoologists and naturalists and collected a great deal of his data this way. In letters, he and his colleagues took to referring to the study of mystery animals as ‘cryptozoology’, and this word first saw print in 1959 when French wildlife official Lucien Blancou dedicated a book to Heuvelmans, describing him as the ‘master of cryptozoology’. This term became mainstream during the 1980s and today Heuvelmans is widely regarded as the ‘father of cryptozoology’: he was not only responsible for collecting and cataloguing the vast bulk of mystery animal reports known prior to the time of his death, but also for formalizing, defining and codifying cryptozoology as a topic of study.

It should be said that a third individual also wrote about mystery animals at the same time as Sanderson and Heuvelmans. This was German palaeontologist, aerospace engineer and science writer Willy Ley. Ley’s books of the 1940s and 50s are often given fair mention in discussions of the early history of cryptozoology and include chapters on sea monsters, mystery primates and legendary creatures like dragons and unicorns. While Ley’s books were widely read (and were respected by the likes of Sanderson and Heuvelmans), they did not have the same foundational importance as works like *On the Track*.

Heuvelmans and cryptozoological literalism

It’s clear from Heuvelmans’ writing that he really did consider a diverse menagerie of often spectacular creatures to be behind eyewitness reports of mystery animals. It’s also obvious that a great many of his ideas were inspired by discussion with Sanderson, and the two became close allies, working together on several projects. Heuvelmans’ style of writing makes it sometimes difficult to pin him down on precise conclusions about the creatures he thought likely to exist, but in 1986 he published a definitive list of those creatures he regarded as most probably awaiting discovery. The list is long, featuring more than 138 mystery animals and including virtually all of the ‘superstar cryptids’ regarded with scepticism by the majority of ‘mainstream’ scientists: monstrous ‘sea serpents’, the Loch Ness monster and other lake monsters, the yeti, bigfoot and so many others are all included.

So we can say without doubt that cryptozoology was founded by people very much of the opinion that ‘mainstream’ zoologists had failed to discover or catalogue a substantial portion of the planet’s megafauna and who maintained that mystery animal reports were best interpreted as descriptions of encounters with real, unknown animals. Heuvelmans specifically stated his dissatisfaction with the mainstream zoological community, describing in the 1995 edition of *On the Track* how he was ‘indignant at the ostracism imposed by official science – we would say today the scientific *Establishment* – on those animals known only through the reports of isolated travellers, or through often fantastic native legends, or from simple but mysterious footprints, or the recital of sometimes bloody depredations, or through traditional images, or even a few ambiguous photos’.

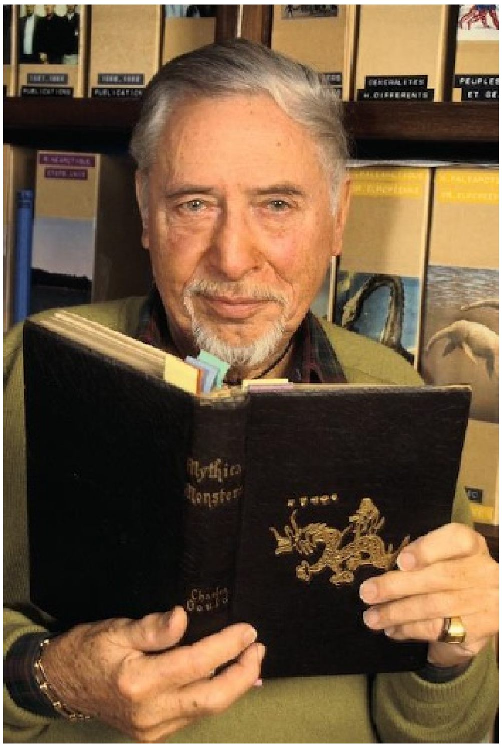
The approach of Heuvelmans and Sanderson – and of their followers – is thus that mystery animal reports should mostly be accepted as descriptions of encounters with real animals, and even that myths and legends should be ‘demythified’ so that the real animals at their cores can be identified. It’s assumed that the stories and tales of unusual creatures described in ethnic lore represent so-called *ethnoknown* creatures – that is, animals known to the people of a region but not yet accepted or confirmed as real by science. This entire approach to cryptozoology is sometimes termed ‘flesh and blood cryptozoology’ or ‘cryptozoological literalism’.

The precise definition of cryptozoology has been a matter of disagreement. The most common understanding of the term is that it’s synonymous with ‘monster hunting’ and involves the pursuit of superstars such as Nessie and bigfoot. But this understanding is somewhat erroneous, since some mystery creatures that have been the subject of cryptozoological interest are not at all monster-like and are actually small and mundane. Heuvelmans’ 1986 list includes a small wildcat seen in the Mediterranean, a marmot-like mammal from Ethiopia and a small flightless bird from an island in the South Pacific. Heuvelmans himself preferred a definition of cryptozoology in which those creatures of direct interest to cryptozoology – the cryptids – had to be remarkable, exceptional or emotionally unsettling, yet this is at odds with an interest in the small, mundane target animals that he included in his list.

So, should cryptozoology be defined as the field of study that investigates *any* animal that’s ‘ethnoknown’ or known only from anecdote? The corollary of such a definition is that it would automatically mean that cryptozoology overlaps extensively with ‘ordinary’ zoology, since there are a large number of mammals, birds and other animals that were reported anecdotally before they were officially recognized. Should those animals be regarded as cryptids, too – at least prior to their discovery? We’ll return to this area in a moment.

During the 1980s, a team of people inspired by Heuvelmans’ writings on cryptozoology banded together to form the International Society of Cryptozoology (or ISC). Among those behind the formation of the society were Roy Mackal (a biochemist based at the University of Chicago) and Richard Greenwell (a mammalogist based at the University of Arizona). Both wrote extensively about mystery animals (Mackal wrote the 1980 book *Searching for Hidden Animals*) and went in quest of them all around the world. A large number of zoologists and palaeontologists were invited to serve as board members for the ISC, and a technical journal devoted to cryptozoology meant that a large number of academic articles on the subject appeared in print. For a while, the existence of the ISC meant that cryptozoology looked somewhat respectable and was perhaps close to being recognized as a proper sub-discipline of zoology. However, the society fell apart during the 1990s, apparently due to financial problems, and whatever status it achieved for cryptozoology has mostly been forgotten since.

Over the last few decades, the status of cryptozoology has become the subject of quite some discussion and strongly diverging opinions have appeared. In the grand scheme of things, and despite the efforts of Heuvelmans and the ISC, cryptozoology cannot be said to have a good reputation. Among scientists and people at large, it’s still associated with pseudoscience, hoaxing and with those ‘paranormal’ subjects we saw earlier – UFOs, ghosts and so on. Investigations by sceptics – among the most notable is Daniel Loxton and Donald Prothero’s 2013 book *Abominable Science!* – have shown how ‘superstar cryptids’ are based on extremely dubious ground and cannot be considered to be supported by any reasonable evidence.



Bernard Heuvelmans, shown here in his library, is the famous ‘Father of Cryptozoology’. He died in 2001. His books inspired generations of naturalists and scientists to take a serious interest in tales of mystery animals from around the world. Heuvelmans was a prolific author and a qualified expert on mammalian dentition.

At the same time there’s been renewed interest in the idea that mystery creatures, and alleged sightings of them, are more to do with human culture, with how people interpret the world and the way they perform as observers and story-tellers. Seen this way, cryptozoology is more to do with sociology, social anthropology or psychology than it is with zoology, meaning that it’s hard to categorize and has to be regarded as somewhat distant from pure zoology. Since the 1980s, folklorist Michael Meurger has shown how many of the ideas associated with mystery creatures are not new features ‘discovered’ by cryptozoologists. Rather, they’re age-old motifs that extend back centuries or more and are intertwined with folklore and mythology.

To take one particularly well studied example, the idea that lakes are inhabited by dangerous monsters with horse-like features: that these monsters have hairy manes, an ability to walk and forage on land and that they’re dangerous to swimmers and children at the water’s edge is not a set of features that have emerged from first-hand encounters with real animals that match this description. Instead, these are archetypes or motifs, deeply embedded within the folklore and tales of a group of people, so pervasive and deeply rooted that people across the centuries simply cannot help but associate large, deep lakes with mythical animals of this sort. Rather than being based on descriptions of unknown animals, we have to conclude that those stories of horse-headed, maned, lake-dwelling monsters originated simply as stories – there doesn't need to be a real animal at the bottom of them, nor is there any evidence that there ever was. Similar things can be said about sea monsters, hairy, man-like monsters, and other creatures of the sort so familiar in the cryptozoological roster.

The reliability of eyewitness evidence

A second problem area for 'flesh and blood' cryptozoology concerns our understanding of how people perform as eyewitnesses. As we've seen above, cryptozoology mostly revolves around the idea that people have seen (and have then reported) creatures that don't match those known to science. In other words, it's based on data that comes primarily from eyewitness encounters. The primary assumption here is that such eyewitness accounts represent a reliable source of information, even when obvious hoaxes and mistakes are excluded from the body of accepted accounts.

A large number of studies – more than 2,000 – have examined people's abilities to observe events, recall observations and describe those observations at a later date. Time and time again, the results show that people function poorly as 'data recallers'. Studies have also demonstrated that people are easily led astray by comments or ideas made by other people, so much so that what might be described as 'phantom observations' or 'false memories' are the result. None of this is good news for the idea that descriptions of unusual animals are evidence of encounters with real, unknown animals. It should be said that much of this research has investigated people's performance when dealing with crimes and criminal behaviour. However, specific attempts to see how good people are at remembering and reporting information on mystery animals (or simulations of mystery animals: people in suits and so on) have been made as well.

The main conclusion to take away from this work is that cryptozoologists who interpret eyewitness accounts as reliable descriptions of encounters with animals are almost definitely assuming that people function better as witnesses than they actually do. There are so many problems, so many areas of uncertainty, associated with eyewitness testimony that we should be extremely sceptical of any claim based on eyewitness data alone.

Like many people, I became interested in cryptozoology because – as a much younger person – I originally thought it likely and plausible that such mainstays of cryptozoology as bigfoot, the yeti, sea monsters and so on probably did exist. It seemed only a matter of time before physical remains confirmed their existence. Today, the complete absence of convincing evidence for cryptids – combined with indications that there are explanations of claimed sightings of mystery animals – leads me mostly to regard cryptozoology as a hybrid subject that, while sometimes incorporating information from animals at its core, is more to do with how humans perceive and describe the world. There certainly are new animal species to discover, but the superstar 'targets' of cryptozoologists are almost certainly not among them. Bigfoot, Nessie and the various other mystery creatures discussed in this book may well not really be mystery creatures at all, but self-perpetuating cultural phenomena.

Cryptozoology: science or pseudoscience?

The aficionados of cryptozoology have frequently argued that their field is a science. 'Science' refers to a method of studying the world in which data is collected and ideas and explanations are proposed based on interpretation of that data; the data has to be available for scrutiny by others, and the methods and techniques used in forming conclusions have to be explicable and comprehensible. Attempts to explain things that use scientific-sounding terms but do not apply these standards of data availability and explainable, repeatable methods are generally termed 'pseudoscience'.

One way of looking at cryptozoology is to say that it involves the collection of data (in this case, the data points are observations and anecdotes) and the examination of this data via explicable methods. Seen this way, cryptozoology is indeed a science.

In fact, as argued by Chad Arment in his 2004 book *Cryptozoology: Science & Speculation*, cryptozoology of a 'conventional' sort really does operate under scientific principles. It aims to be sceptical and self-correcting, with poorly founded ideas and erroneous data being overturned, replaced or rejected in time. The working ideas encountered in cryptozoological writings can be considered hypotheses. These can be bolstered by additional data and experimentation or refuted and discounted if the data that comes in makes it look likely that a better explanation exists. This kind of research is still scientific, even when the hypotheses are faulty and the conclusions are incorrect. Cryptozoology as a whole is therefore not a pseudoscience, because the data integral to its hypotheses are available for further examination, and the conclusions and explanations proposed by its practitioners are reached via the use of explicable methods.

A critical response to this view of cryptozoology as a science is that many cryptozoologists don't really behave like 'proper' scientists. After all, cryptozoologists often approach data with pre-existing conclusions (namely, that the data they're collecting pertains to a specific idea about a specific creature they already believe in) and don't reach conclusions using well-explained methods. This all sounds more like pseudoscience. There's no doubt that some cryptozoologists do behave this way. A classic example is provided by the pro-bigfoot team on the TV show *Finding Bigfoot* who all too frequently marshal any piece of field evidence or eyewitness anecdote to support their model of what bigfoot is like and how it behaves.

Things become further complicated when we consider that not all people who investigate mystery animal reports automatically assume that those reports describe encounters with undiscovered, flesh and blood animals. What of those researchers who treat these data points in a somewhat different fashion – as representations of people's interpretations of *something*, but something that isn't necessarily an undiscovered animal? Something they saw but misidentified? Something they didn't see but imagined? Something they imagined because the idea that they might see it already existed in their particular view of the world?

An interest in mystery animal reports does not, therefore, demand or require the 'belief' that the reports concerned describe encounters with unknown animals – maybe some other explanation exists. This way of dealing with cryptozoological data is increasingly being termed 'post-cryptid cryptozoology', and it's very much scientific. It sees the subject as more to do with human behaviour and culture than pure zoology. Admittedly, relatively little research of this sort has so far been conducted. In the UK, ecologist Charles Paxton has been the main producer of research of this kind. Paxton has studied how people perform as eyewitnesses when confronted with unidentified animals seen in lakes, sea monsters at sea and bigfoot-type creatures confronted in forests.

Is cryptozoology really a part of zoology?

We saw earlier in this chapter that cryptozoology is most frequently defined as the study of animals known only from anecdotal accounts. This seems like a good definition, but it introduces a complication. A huge number of animals that are conventionally not regarded as part of the cryptozoological remit were known from anecdotes, legends or eyewitness accounts before they were discovered and scientifically described. Among the most famous of examples is the okapi *Okapia johnstoni* – scientifically recognized in 1901 yet suspected to exist from 1888 onwards. Several other classic zoological discoveries of the 20th century, including the mountain gorilla (scientifically recognized in 1902) and the Komodo dragon (scientifically recognized in 1912) were also suspected to exist, or were known from folklore or anecdote, before their formal discovery by westerners. Incidentally, the giant squid – so often pointed to as another example of this sort of thing – is actually not at all, as we'll see in Chapter 2.

The okapi was discovered in 1901. Its discovery was not accidental – the colonial administrator and naturalist Harry Johnston had been in search of it ever since explorer Henry Stanley made mention of it in his book of 1890. In turn, Stanley had learnt about it from the Wambutti people of the Congo.

Discoveries of this sort continue to be made. During 2003, primatologist Tim Davenport heard about an unusual long-furred monkey in the Mount Rungwe region of Tanzania that he was unable to identify. Another primatologist, Trevor Jones, saw an unusual, unidentifiable monkey in the same region, and at about the same time. Local people had a name for this animal, calling it the *kipunji*. Eventually, good photos and dead specimens of the kipunji were obtained. Named and technically described in 2005, it proved to be a new species (now called *Rungwecebus kipunji*) closely related to baboons.

Since the 1990s, Brazil-based mammalogist Marc van Roosmalen has collected stories from local people of mammal species (or subspecies) that inhabit the Amazon, and don't match species (or subspecies) known to science. Among these is an unusually large member of the pig-like peccary family, known to local people and said to be distinct from the other peccary species of the region. Van Roosmalen finally obtained skins and skulls of this animal in 2003 and formally named it as a new species – the giant peccary *Pecari maximus* – in 2007.

One more example: in 2010, a team of primatologists investigated Burmese stories about a weird monkey with an upturned nose. This led to their discovery of what proved to be a new species, today called the Burmese snub-nosed monkey *Rhinopithecus strykeri*. There are many, many other examples of this sort of thing.

In all these cases, scientists collected anecdotal data (stories, indigenous knowledge or sightings) that seemingly described animals unknown to science, went in search of the animals concerned and then confirmed them as real, hitherto-unknown species. We've already seen that what might be regarded as the best definition of cryptozoology involves the investigation of animals (or *claimed* animals) known only from anecdotal data. So, were the okapi, mountain gorilla, kipunji, giant peccary and Burmese snub-nosed monkey all cryptids prior to their official discovery? And were the scientists who investigated initial reports of these animals doing cryptozoological research? And should those scientists be regarded as cryptozoologists?

The majority of individuals concerned would say 'No', whereas people whose main interests lie with cryptozoology would say 'Yes', in part because they want the subject to be taken more seriously and to be considered on an equal footing with the formally accepted branches of zoology. A tidy solution to this problem isn't obvious. Ideally, it might be wise for cryptozoology to be considered a branch of ordinary zoology that specializes in the collection and interpretation of anecdotal or apocryphal data. Many people interested in cryptozoology might well prefer this definition to be the one that ultimately becomes favoured.

But this will almost certainly never happen, quite simply because the name will forever remain attached to 'monsters', 'mystery creatures' or 'cryptids' – to lake and sea monsters, cryptohominids like bigfoot and yeti, and so on. Quests for unusual monkeys, peccaries and other animals thought to belong to uncontroversial groups widely studied by mainstream zoologists will continue to be regarded as part of mainstream mammalogy, herpetology, ornithology or whatever. In fact, the effort to make cryptozoology part of 'mainstream zoology' now has to be regarded as misguided, since – as discussed above – the subject really does seem more to do with folklore, anthropology, culture and people's abilities to function as witnesses. We'll come back to this point throughout this book: study has shown that the 'mystery creatures' endorsed by cryptozoologists are not pure zoological phenomena at all.

Where, then, does cryptozoology stand today? A knowledge of zoology and of the cryptozoological literature provides a necessary background knowledge to any interpretation of mystery animal reports, but it increasingly seems that the study of these reports is more to do with folklore, mythology, culture and the way people perform and behave as witnesses and as recallers and communicators of information. The fact that superstar cryptids are almost certainly not real doesn't make 'post-cryptid cryptozoology' any less interesting; in fact, it might even be far more interesting as a subject of investigation and novel research. Right now, it isn't yet obvious where cryptozoology really does 'belong' among the sciences, and that itself is an interesting situation that calls for further study.

Chapter 2 - Monsters of the Deep

It was a fine and sunny day in June 1870 when schoolteacher Miss S. Lovell encountered a ‘monster turtle fish’, perhaps 10 m long, in the shallows of Fraser Island, Queensland, Australia. Observing it from less than 2 m away, she described a dome-shaped body and a long, scaly, tail of the kind found on a fish. It seemed to stand on four legs, though these were obscured by the shallow water. It raised both its neck and tail out of the water at high angles for some time before suddenly shooting out to sea. According to Lovell, this was the moka-moka or moha-moha, an animal known to the local indigenous people and even preyed on by them.

Old sea maps, like this one from the 1500s, show terrifying marine monsters that do not properly match any creatures known to science. Could these really be illustrations of animals as yet unknown to science, as suggested by some cryptozoologists? Or were they just fabrications and cartoon-like renderings?

A fish-tailed, turtle-backed sea monster observed at close range is one thing. But what of the long-necked, triple-humped creature seen from the deck of the *Umfuli* while off the coast of Mauretania in 1893? Fully 24 m long, its neck alone was 5 m long, and it was dark brown overall and seen to open its mouth and reveal large teeth. And what are we to make of the giant, crocodile-shaped animal – 20 m long – that was reportedly blasted clean out of the water when the British steamer-ship the *Iberian* exploded off the coast of Ireland in 1914? What about the long-necked, serpentine creature, observed off the coast of Western Australia through telescopes mounted on the naval oil tanker the *Kurumba* in 1939? According to the only surviving witness – Cecil W. Walters – this creature was over 27 m long, patterned with blotches of blue, green and yellow, and had a mammal-like head with small ears. A long tongue could be seen flicking in and out of its jaws.

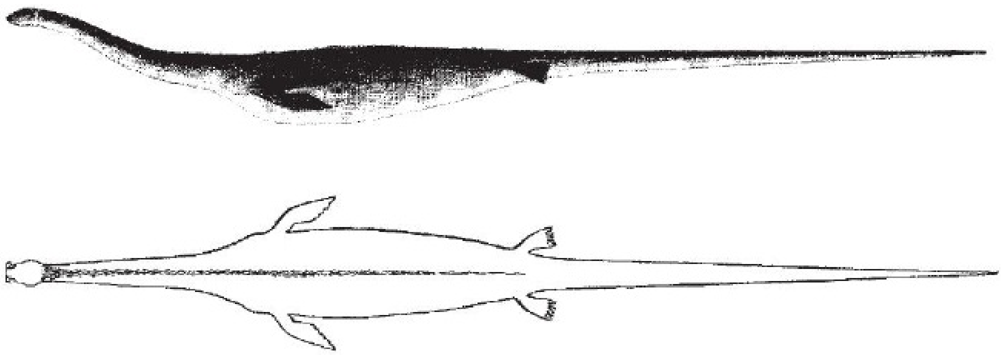
And – one more – what on earth was the vertically flexing, serpentine monster seen in San Francisco Bay by Robert and William Clark in 1985? Perhaps more than 20 m long, it had a snake-like head, two pairs of paper-thin fins that resembled foldable fans, and was covered in brownish-green scales.

For as long as people have been exploring the sea, or exploiting it as a source of food and revenue, there have been tales of giant seagoing monsters, of weird, hybrid creatures that combine the features of assorted animals that inhabit the land, and of frightening, dangerous versions of creatures generally associated with smaller size, like squids, octopuses and crabs. That ideas about sea monsters extend back into antiquity is confirmed by the appearance of such creatures on ancient Greek and Roman pottery and mosaics and by the mention of a mighty sea-beast termed the Leviathan in the Bible. Chinese and Japanese sea monster stories go back millennia, as do those of many other nations and cultures. Medieval Scandinavian maps featuring an assortment of serpentine sea monsters, tusked sea-orcs, gargantuan fish and other creatures confirmed that the seas were filled with dangerous unknown giants that presented a great danger to seafarers.

By the Middle Ages, European ideas about sea monsters were mixed with stories about animals we know to be real (like crocodiles, snakes and elephants), meaning that sea monsters were perhaps considered as potentially real as those other creatures. Scaly, serpentine monsters termed sea serpents were regularly depicted, as were enormous squid and octopus-like molluscs, and a lobster-like crustacean as big as a ship, termed the decapod.

During the late 19th and early 20th centuries, sightings of large seagoing creatures that seemed to defy explanation were regularly reported in newspapers and magazines, often generating considerable interest. Some were made by reputable people with good credentials and experience with regard to the observing of animals and marine phenomena. We'll look at these specific cases in a few moments. Because these accounts seemed reasonable, realistic and difficult to explain away, they were taken seriously by at least some scientists of the time. Indeed, quite a few scientists of this period were 'friendly' towards the existence of sea monsters.

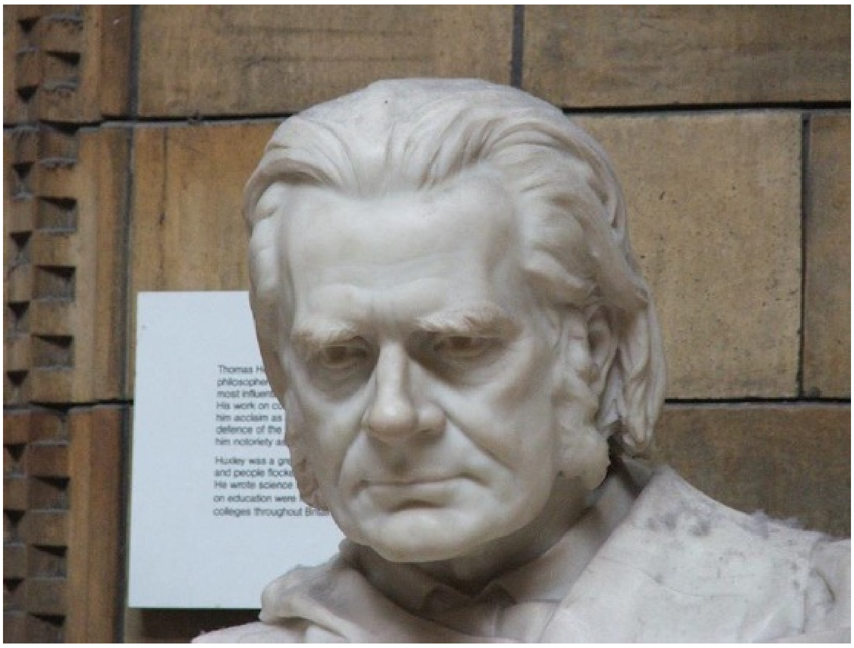
Among the most notable of these was Thomas Henry Huxley, pioneering anatomist, palaeontologist and brilliant orator – the man celebrated as 'Darwin's bulldog' for his forceful advocacy of English naturalist Charles Darwin's theory of evolution. Huxley considered sea monster reports with a fair consideration (and appropriate scepticism), noting that some of the creatures described by eyewitnesses weren't impossible in principle. Anthonie Cornelius Oudemans, a qualified biologist who studied flatworms, mites, primates and other animals, thought that sea monster sightings most likely described encounters with a giant, long-necked relative of other marine mammals – a new animal that he termed *Megophias* – and published an 1892 book on this idea. Other scientists of the time also expressed the view that large, undiscovered sea animals likely still existed, and that at least some 'sea monster sightings' really did describe encounters with such animals.



During the 1890s, biologist Antonie Oudemans proposed that sea monster sightings might be explained by the existence of a giant, long-necked marine mammal which he named *Megophias*. The idea that investigators could 'invent' their own mystery creatures as explanations for monster sightings became increasingly popular in the subsequent decades.

But if we consider the 'mainstream' scientific view of sea monsters, we have to say that scepticism and a lack of evidence ultimately won out. A paradigm shift occurred during the course of the 19th century as it gradually became accepted within scientific circles that sea monsters were either fictional or allegorical, or the embellished, confused descriptions of known species, like large fish, walruses and whales. Huxley might have been open-minded, but he concluded that eyewitness reports were so variable from one witness to the next that they couldn't be regarded as reliable or accurate descriptions of real animals. Richard Owen – the most famous anatomist and palaeontologist of the late 1800s – argued that one of the best-documented sea monster accounts of all time was most likely a case of mistaken identity (we'll look more at the case concerned in a moment) and thereby encouraged a growing movement of scepticism about the subject. Some even said that Owen 'killed the sea serpent'.

And thus it was that – by the first few decades of the 20th century – mainstream zoology had essentially abandoned the concept of sea monsters as real animals awaiting discovery.



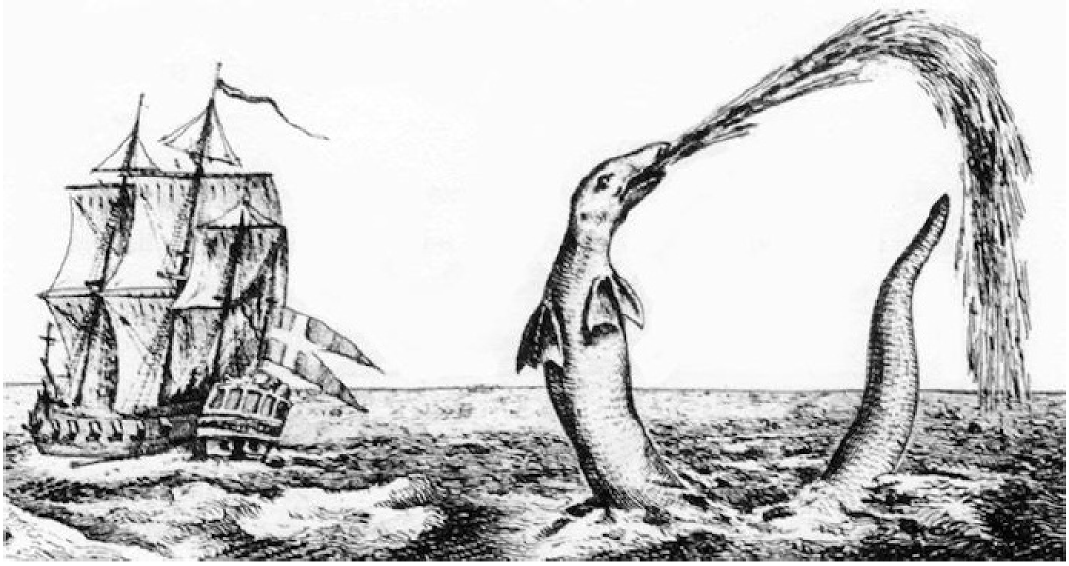
This statue depicts biologist Thomas Huxley, a vehement supporter of evolution often known as 'Darwin's bulldog'. Huxley was one of several 19th-century scientists who commented on the possible existence of sea monsters. While sometimes promoted as a supporter of sea monster existence, he was actually an honest sceptic; though initially undecided he concluded, on the weight of evidence, that sea monsters likely did not exist.

Heuvelmans and the nine sea monsters

For all this consensus, a significant divergent view on the sea monster phenomenon arose in the literature of the 1950s. As you might have guessed based on the discussion of cryptozoological history given in Chapter 1, this view originated with the influential 'father of cryptozoology' Bernard Heuvelmans. Heuvelmans, as we've already seen, made it clear throughout his work that mystery animal accounts (including legends, folkloric tales and sightings) should be interpreted as descriptions of real animals, with those seemingly inexplicable animals reported by eyewitnesses and known from ancient lore interpreted with little hesitation as descriptions of new, scientifically unrecognized animal species.

Heuvelmans amassed a huge archive of historical sea monster accounts and also collected reports from the modern age. His aim was to collate every bit of information going, evaluate it and then see if there was a valid biological signal in the descriptions that people had provided. After all, sea monster reports hardly describe one single creature. On the contrary – as we've seen already – there are descriptions of an extraordinary diversity of sea monsters, ranging from giant serpents and turtles to crocodile- or lizard-shaped animals to multi-humped, armour-plated and tadpole-like beasts. Heuvelmans published his analysis in a giant book, published in 1965 as *Le Grand-Serpent-de-Mer, Le Problème Zoologique et sa Solution*, and translated into English in 1968 as *In the Wake of the Sea-Serpents*.

Heuvelmans explained how careful, critical evaluation of the anatomical features described by eyewitnesses allowed sea monster accounts to be grouped into distinct sets – nine in total. He interpreted these as different sea monster species (or sets of species), and explained how the nine emerged without the involvement of any bias or preconception on his part. The technique he used sounded scientific and many subsequent writers and researchers were convinced by his conclusions, even though it meant going against the strong scepticism of the scientific community as a whole.



In 1734, Danish-Norwegian missionary Hans Egede described an observation (most likely made by his son) of a monster seen off the coast of Greenland. Imaginative reconstructions of the scene – like this one – show a long-bodied, long-tailed monster with paddles and an ability to squirt water. However, the original illustration is less spectacular, instead depicting an S-shaped structure shown lifted above the water surface. It was probably a whale's penis.

What's often been ignored is how radical Heuvelmans' ideas were. We've already seen how people interested in mystery animal accounts have often favoured – and often still do favour – the idea that particular mystery animals represent the surviving members of groups otherwise known only from the fossil record. This is known as the prehistoric survivor paradigm. Heuvelmans adopted this view wholesale, but (aided and abetted by Ivan Sanderson) he did something that was innovative and resulted in the creation of a whole new way of thinking about how mystery animal reports might be interpreted: he proposed that sea monsters might be the substantially modified, *evolved* descendants of species known from the fossil record.

This approach proved extremely influential and inspired subsequent investigators of sea monsters to do likewise. In other words, Heuvelmans not only made sea monsters 'real' again, he also introduced a technique whereby researchers were no longer constrained to match imagined mystery beasts with possible contenders from the fossil record. Instead, speculative 'creature building' became a major component of the way cryptozoological investigation was conducted.

Heuvelmans' nine sea monster types were as follows. He interpreted gigantic, serpentine sea monsters as 'super-eels', a group of gigantic eel and eel-like fishes some of which were more than 15 m long. He dubbed a long-tailed, web-footed creature associated with the cold waters of the far north the 'super-otter' *Hyperhydra egedei*; he regarded it as the direct descendant of early quadrupedal whales known from the fossil record of the Eocene age (and thus about 45 million years old or so).

Humpbacked, whale-tailed creatures from the North Atlantic he interpreted as a giant whale-like mammal called the 'many-humped', or *Plurigibbosus novaeangliae*. Again, he suggested this was a late-surviving early whale, this time a descendant of large, long-bodied, fully aquatic whales like the famous 40-million-year-old *Basilosaurus*. A number of weird accounts from tropical waters that sometimes described armour plating and sideways-projecting fins he grouped together as the so-called 'many-finned'. Heuvelmans regarded this as yet another archaic whale – an armour-plated one with mobile fins fringing its sides, no less – and termed it *Cetioscolopendra aeliani*.

Then there was the 'merhorse', a horse-headed, maned creature with big eyes, seen worldwide and suggested to be a deep-diving mammal, perhaps a relative of seals. Again, it was given a suggested scientific name: *Halshippus olaimagnai*. A second possible seal relative was the 'long-necked', a bulky-bodied, near-tailless creature notable for its plesiosaur-like neck and awarded the name *Megalotaria longicollis*.

Gargantuan turtles – several times bigger than the largest living turtle species known to science – belonged, he suggested, to a probable new species called the 'father-of-all-the-turtles'. Giant, crocodile-shaped sea monsters reported from tropical waters represented the 'marine saurian', a modern-day descendent of one of the Mesozoic marine reptile groups (either the seagoing relatives of crocodiles called metriorhynchids or the huge, seagoing lizards called mosasaurs). Finally, the most enigmatic of Heuvelmans' sea monsters was the 'yellow-belly', a surreal beast from tropical seas, shaped like a gigantic, long-tailed tadpole, and striped on its upper surface with dark bands.

For a few decades after the publication of this nine-fold classification scheme, it was thought that Heuvelmans had done a good job, and that a scientifically grounded approach to the sea monster mystery had unravelled it, transforming the subject into one that could now be taken seriously by mainstream scientists. Alas this view was not accepted in the mainstream community, but it was certainly influential among those who took the existence of sea monsters seriously. In fact, several books on sea monsters are structured entirely around Heuvelmans' classification, and some effort has been made – most notably by theoretical ecologist Michael Woodley – to see if sea monster accounts collected after the 1950s conform to Heuvelmans' categories.

For all those claims of Heuvelmans having 'done a good job', or of being rigorous or scientific, critical appraisal has shown that he was not in the least bit rigorous, consistent or scientific in his analysis. If we look carefully at which accounts were consigned to which category, and at the key physical and biological attributes associated with them, we see that his system doesn't work at all. Sea monsters described as having the features of any one of his nine types were identified on the basis of vague assertions, or because they didn't conform to his ideas of where the given types were imagined to occur. To take just one example: a short-necked, multi-humped monster seen from the *Tonny* at Oslofjord, Norway, in 1902, sounds like a classic 'many-humped', yet was identified as a 'long-necked', apparently because Heuvelmans had decided that the 'many-humped' does not inhabit the waters around Scandinavia. This is far from a one-off. There are numerous examples of 'misidentifications' of this sort, many of which were discussed by Ulrich Magin in his 1996 evaluation of Heuvelmans' sea monster research.

Furthermore, detailed descriptions – the classic example is the *Daedalus* account of 1858 (discussed further below) – are inconsistent with Heuvelmans' scheme since they possess features that shouldn't be present in combination. The *Daedalus* monster was described as being long and near-cylindrical, lacked any mention of a neck and had a mane some distance along its neck, making it inconsistent with his classification.

Heuvelmans was also sometimes duped by misidentifications and hoaxes, despite his proclamation that spotting these was 'child's play'. A horse-headed sea monster from Vancouver Island – identified by Heuvelmans as a probable 'merhorse' on the basis of an initial newspaper account – had been pursued by numerous witnesses after its appearance and identified as a large sea lion. A blunt-headed creature with a serrated back – seen off the island of Soay in the Inner Hebrides in 1959 – was obviously a large sea turtle, yet Heuvelmans identified it either as a 'merhorse' or a 'father-of-the-turtles'. In cases such as these we see that he was using the very opposite of a familiar scientific principle: namely, that simple explanations should be preferred over more elaborate ones.

Finally, one of the most famous sea monster stories of all (it was mentioned at the start of this chapter) describes a World War I event in which a giant crocodile-like beast, 20 m long, was blasted skywards by an enormous underwater explosion. That explosion came from the bowels of the sinking British steamer the *Iberian*, which had been torpedoed by the German submarine U28. This incredible tale appeared in print in 1933, when it was relayed by former U28 skipper Georg-Günther Freiherr (Baron) von Forstner in an article he wrote about the Loch Ness monster. Heuvelmans interpreted the U28 creature as a genuine sea monster – as a representative of his 'marine saurian' – and reproduced a drawing that shows the beast as a flippered animal somewhat resembling the crocodile-like metriorhynchids of the Mesozoic. Historian Mike Dash has shown that, if we trace the sources Heuvelmans consulted, we find that he relied on retellings in popular books, not on von Forstner's original account. And not only is von Forstner's account dubious (as noted, it was only published at the height of the Loch Ness monster craze), it also features a very different animal from the one Heuvelmans described. A beautifully detailed illustration depicts no flippered, metriorhynchid-like 'marine saurian', but an exact replica of a stuffed baby Nile crocodile. The final nail in the coffin comes from the fact that not one of the many witnesses who watched the *Iberian* sink ever reported a monster, blasted skywards or otherwise. We have to conclude that von Forstner invented the whole tale.

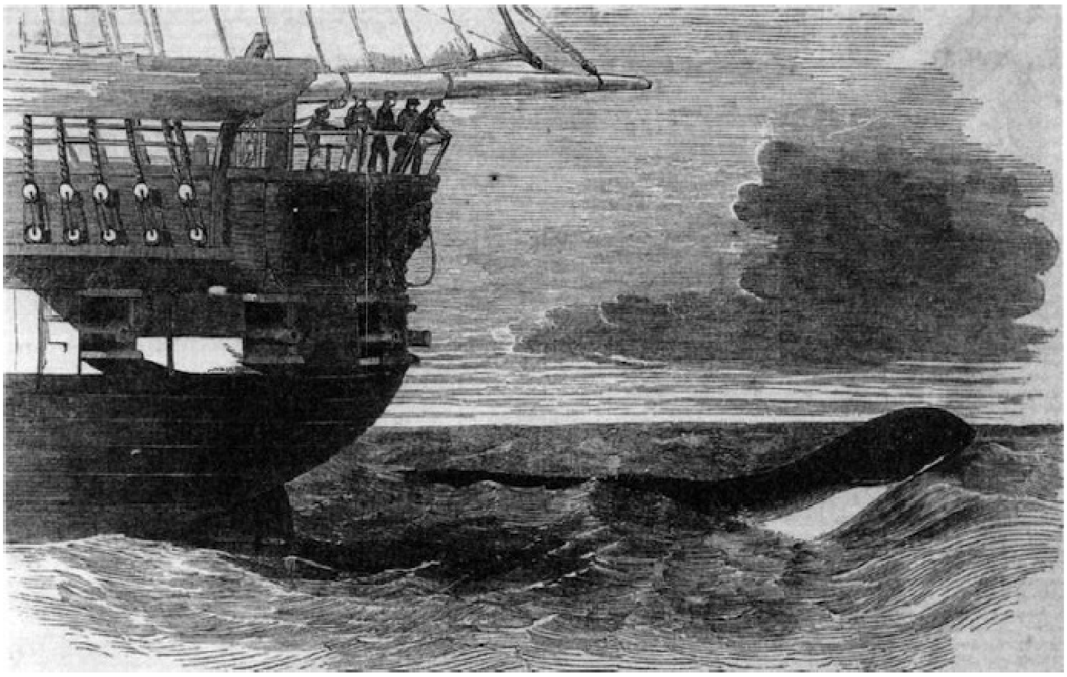
It's for these reasons that we simply have to abandon the entire Heuvelmans scheme and regard his overarching system as a failure. We might continue to think positively of Heuvelmans for his value as a cataloguer of sea monster sightings and descriptions, but his uncritical use of secondary sources, his lack of ability in critically evaluating accounts and his practice of allocating sea monster accounts to specific categories when this is inconsistent with the reports themselves show that he did not work in a systematic, rigorous fashion. What instead appears to have happened is that Heuvelmans shoehorned sightings into pre-existing categories that he (and his colleague Sanderson) had already invented.

This then brings us to a larger issue. Where did the initial inspiration for those nine sea monster kinds come from in the first place? After all, if there are reliable, well-founded cases at the 'cores' of these categories, it might be possible to argue that they really do correspond to as yet unconfirmed species. Alas, it's not to be. Time and time again, the 'core' reports prove unreliable and are better interpreted as something other than the imaginary creature Heuvelmans had in mind. The core report integral to Heuvelmans' concept of the 'super-otter' was a sighting of a giant, paddled beast seen rearing up off the coast of Greenland in 1734. But the fantastic illustrations of this account are rather embellished relative to the written accounts themselves: in 2005, Charles Paxton and colleagues argued that those original descriptions most likely referred to sightings of a large whale, its S-shaped 'tail' perhaps reflecting the fact that this was a male in a state of sexual arousal. The 'marine saurian' was heavily based on the imaginary U28 encounter, the 'many-finned' was based on a small number of accounts that cannot be interpreted as describing the same kind of object, while the 'father-of-all-the-turtles' is based on confused sightings of large leatherbacks and other known turtle species. Heuvelmans' 'yellow-belly' is essentially based on one sighting: that reported by people aboard the *Nestor* in 1876. But while Heuvelmans interpreted the *Nestor* creature (and, indeed, the 'yellow-belly' as a whole) as a giant tadpole-shaped beast, the eyewitness encounters are hopelessly ambiguous, referring to a giant dragon-type or salamander-shaped monster suggested by some to be a giant turtle or ray!

It doesn’t necessarily follow that attempts to group sea monster accounts into sets or categories are futile or doomed to failure, but one of the most obvious aspects of sea monster accounts is their variety and lack of homogeneity. The picture that emerges is not of a specific number of well-demarcated unknown animals with particular traits, distributions and anatomical features, as Heuvelmans proposed, but of a hodgepodge of anecdotes relating to all manner of different things seen at sea.

Of *Daedalus* and *Valhalla*

A small number of sea monster accounts have been significant as far as public perception of these creatures is concerned: they were so influential, in fact, that they seem to have led to widespread changes in terms of the sorts of sea monsters people described. Among these is the *Daedalus* encounter of 6 August 1848. According to Captain Peter M’Quhae (pronounced ‘Ma-Kaye’), the *Daedalus* was at sea off Namibia in the South Atlantic when a giant, long-bodied, blunt-headed sea creature was observed by many members of the crew. The creature’s visible part was described as being 18 m long, and it was said to be snake-like, dark brown above and yellow-white on the throat. A structure described by M’Quhae as a mane like that of a horse was present some distance along the body, though it was also intimated by M’Quhae to perhaps be a bunch of seaweed. The creature passed close enough to the ship that M’Quhae described how ‘had it been a man of my acquaintance, I should have easily recognized his features with the naked eye’. The animal did not undulate, nor was it obvious how it might be propelling itself through the water.



The *Daedalus* encounter of 1848 was a pivotal event. Most discussion of the sighting has revolved around this newspaper illustration. The *Daedalus* event inspired 19th-century scientists either to support or denounce the existence of sea monsters, and it seems to have changed people’s ideas as to what sea monsters might look like. Today it seems that the sighting was actually of a skim-feeding sei whale. The appearance of these animals was not familiar to people at the time – nobody knew how long and slender-bodied they are.

Most discussions of the *Daedalus* encounter have been based almost entirely on the artwork produced at the time, most notably that published in the *Illustrated London News*. These illustrations depict a blunt snout, an obvious mouth and eye – and that short, wavy mane. The illustrations do a good job of making the creature look like a plausible, undiscovered seagoing mammal of some sort.

Several opinions were expressed about the identity of the creature. One exciting suggestion was that it might be a giant version of the deep-sea gulper eel, a long-bodied fish that possesses an enormous, distensible stomach and huge mouth. Another was that it might be a plesiosaur, and another that it might be a giant python. Richard Owen concluded that it was most likely a seal, most probably an elephant seal that had been carried north on an iceberg. His reasoning was mostly based on the fact that M’Quhae had described the beast as possessing a mammal-like head. Owen did, however, express doubts about his proposal, his primary contention being his confidence that it was a mammal and not a reptile. Charles Darwin commented on the case in correspondence with Owen (the two would later become enemies – this was, after all, before Darwin’s 1859 publication of *On the Origin of Species*).

Owen’s scepticism about sea monster sightings and the value of eyewitness data in general marked the beginning of the phase in which mystery animals seen at sea were treated more harshly than they were before. His criticisms were, however, based on the assumption that the illustrations of the animal produced for the *Illustrated London News* were accurate. The fact that the most famous depictions of the monster were produced for appearance in the media was always problematic, since artistic depictions are often sensationalized and make an event look clearer and more dramatic than it was. Furthermore, both images show the scene as if witnessed from the surface of the ocean, not from the ship (both depict the *Daedalus* in the background).

Long overlooked is that a first-hand eyewitness sketch of the creature also exists. Produced by Lieutenant Edgar A. Drummond, this image shows a far less imposing creature and is far more ambiguous with regard to the monster's appearance. It shows a long, low object, scarcely discernible from the surface of the water, with a slender pointed head in front – a head completely different in shape from the one verified by M'Quhae – and a small fin some distance along the object's length.

There's no guarantee that Drummond was necessarily a better or more reliable eyewitness than anyone else, but at least his illustration is a first-hand one, not a redrawing by a different party. A few authors have suggested that it might have been a giant squid, the 'head' end of the animal being the tip of the squid's mantle, the tentacles trailing behind and out of sight. But this is a poor explanation. Squids don't swim with the mantle projecting like this, nor does the *Daedalus* creature possess any special squid-like features.

In fact, the features that Drummond illustrated are a very good match for a whale, specifically a sei whale practising the foraging technique known as skim-feeding. As argued by Gary Galbreath in 2015, whales that do this swim along at the water's surface, the front part of the upper jaw projecting into the air, and it was this projecting jaw that was mistaken by M'Quhae, Drummond and others as a monster's head. The case nicely illustrates the 'Chinese whispers' way in which reports are modified and embellished once they become depicted in artwork. This, of course, harks back to the discussion of eyewitness reliability given in Chapter 1 and of how specific details may be very wrong or even completely inaccurate.

Whatever animal or object was really behind the *Daedalus* encounter, this account was highly influential on people's perception of sea monsters in the latter part of the 19th century. One of the most publicized suggested identifications for the creature was that it was a modern-day plesiosaur, a group of animals that had only been discovered two decades beforehand and which were popular during the 1840s. If we combine these two cultural set pieces – the proposal that the *Daedalus* beast was a plesiosaur with an increased awareness and popularity of this group of (mostly) long-necked reptiles – the result was a rise in the belief that people might see 'living plesiosaurs' when peering across the waves.

Certainly, such a view is supported by the sorts of sea monsters that people reported through the 19th century. By analyzing sea monster accounts on a decade-by-decade basis, Loch Ness specialist Adrian Shine has shown how the sorts of monsters reported across the 1800s changed from long-bodied, multi-humped ones to long-necked, plesiosaur-like ones. This increase in plesiosaur-type sightings takes an obvious jump during the 1850s, and by the first decade of the 1900s long-necked sea monster accounts outnumbered all others by a substantial margin. Of course, this is all the more ironic given that the *Daedalus* monster never was described as having a long neck. Nevertheless, trends like this provide compelling support for the idea that sea monster reports tell us more about cultural trends than zoological ones.

The second sea monster sighting that deserves special attention is the *Valhalla* case of December 1905. In that year, naturalists Edmund G. B. Meade-Waldo and Michael J. Nicholl were among those aboard the yacht *Valhalla* on a scientific cruise. It was while off the coast off Paraíba, Brazil, that Maede-Waldo and Nicholl – together with other observers – caught sight of a peculiar dark brown animal, about 1.8 m long in observed length. A long neck projected ahead of a large frill or fin-like structure, the two being separated by a water-filled gap 60 cm or so long. A bulky body was visible beneath the water's surface. The head was blunt, seen to move from side and side, and had a mammal-like appearance. The most remarkable feature was the tall, rubbery-looking dorsal fin that possessed vertical supporting fins or rays. The fin didn't remain in the same position but entirely disappeared beneath the water on occasion. The animal was seen at close range, initially being just 50 yards away, according to Nicholl.

This creature sounds unlike any species known to science. When this is combined with the fact that Maede-Waldo and Nicholl were qualified observers of animals who published their account in the technical literature (Maede-Waldo was an ornithologist and Nicholl an entomologist), it's unsurprising that the account has been regarded as one of the best sea monster sightings of all. Maede-Waldo later thought that the animal might belong to the same species as the *Daedalus* sea monster, and Nicholl – describing it as a representative of the 'great sea serpent' – described his conviction that it was a mammal, not a reptile or fish.

When considering claimed sightings of anomalous animals, people have often not considered all of the options that might be available. The *Valhalla* creature's combination of long neck, short head and tall rubbery fin sounds utterly unlike anything we're aware of, leading people to suggest that it must have been some completely unknown kind of animal.

However, are we sure that we've exhausted all the options? The tall, ribbed fin of the creature makes it sound something like a bony fish, but no fish has a long neck like the one described. Sea monster investigator Rupert T. Gould regarded the animal as turtle-like, perhaps belonging to the same species as the Australian moha-moha. Some turtles have long necks, and the creature's head was described as turtle-like. But this suggestion makes little sense in view of the creature's large fin – no turtle has anything like this. In his 1883 book *Sea Monsters Unmasked*, Henry Lee explained the *Valhalla* animal as a giant squid, the neck and head being a raised arm and the tall fin being one of the mantle fins, viewed projecting from the water because the animal was swimming on its side. This explanation is unlikely for several reasons, one being that giant squid observed at the surface are invariably dead or dying, not healthy and able to swim and submerge, another being that their arms seemingly lack the strength and musculature that allow them to be held aloft and out of the water for any length of time. Heuvelmans regarded the *Valhalla* animal as a member of his super-eel category, dismissing those features that suggested a mammalian identification and regarding the blunt head and dorsal fin as more consistent with it being a fish. He also chose to ignore the fact that the creature was described as having a big, bulky body, not a slender, serpentine one.

One specific animal that has hardly ever been mentioned in connection with the *Valhalla* case might provide an answer. Today we know that fur seals and sea lions (together known as otariids) sometimes swim with one of their flippers held above the water. This behaviour is termed sailing, even though it's more to do with controlling body temperature than using the flipper as a sail. Otariids can also look comparatively long-necked on occasion, and the description of the animal's size, head shape and overall colouration and behaviour are also consistent with an otariid identity.

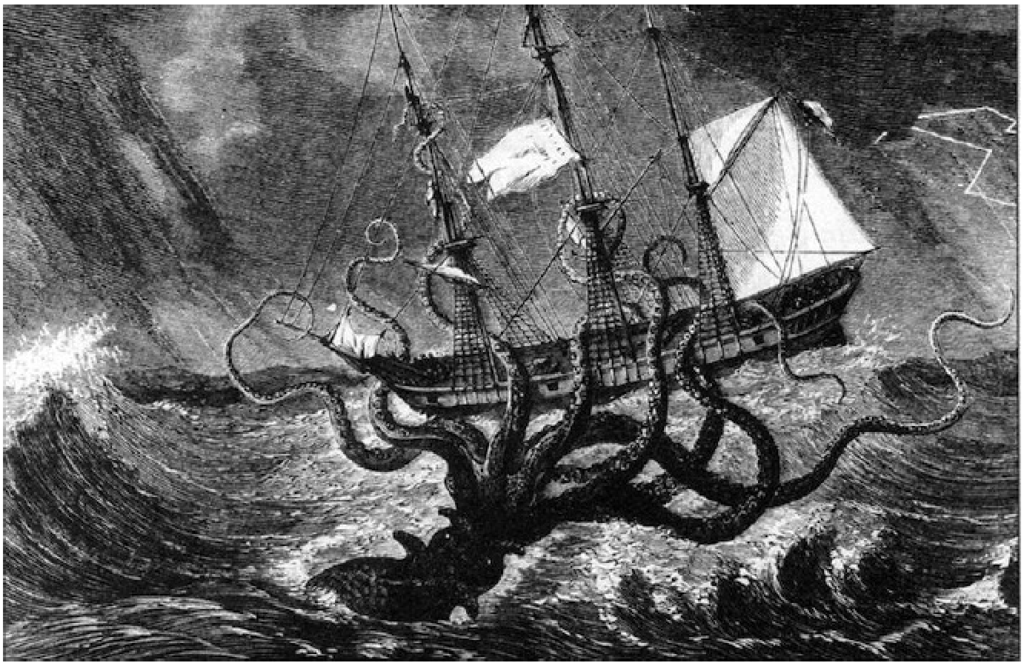
The location of the sighting is also consistent with an otariid identity. The sea lions and fur seals that inhabit the coasts of South America mostly occur further south than the Brazilian state of Paraíba, but wandering individuals do come close to the region: Subantarctic fur seals *Arctocephalus tropicalis* have been recorded from coastal locations only 500 km away from the coast of Paraíba. So, was the *Valhalla* animal actually a 'sailing' fur seal? We can't ever be sure, and the look of the animal in illustrations does leave room for doubt, but the evidence is nevertheless suggestive.

A few other sea monster accounts might also be explained by sightings of pinnipeds behaving in unusual ways. A 1907 sighting reported by Captain C.S. Visser from the Indian Ocean described a creature with a blunt head, longish neck and a tall, slender fin identified at the time as part of the tail. This sighting could well have been of a 'sailing' otariid, too.

The *Daedalus* and *Valhalla* cases both show how classic sea monster accounts transform into something less convincing when we look at them in detail. Even the best sea monster accounts cannot be taken as strong evidence for the existence of giant unknown marine animal species. If this is the case for two of the very best, most detailed sea monster accounts of all – the two that involve the most trustworthy, most reputable and most qualified of observers – what are we to conclude of the large number of less detailed, more ambiguous, less well attested accounts reported by others? There are reasons to take the possible existence of large unknown marine animals seriously, and to assume that at least some sea monster reports perhaps do describe encounters with real unknown animals. But for the most part, we have to conclude that the majority of accounts are too ambiguous to support this possibility and a great many should be regarded as probable misidentifications of known animals.

Krakens, island-monsters, the giant squid and the giant octopus

Sea monsters aren't all reptile-like, mammal-like or fish-like creatures. Discussed and featured alongside these monsters in manuscripts, maps and cryptozoology books are gigantic squid- and octopus-like creatures. Belief in such creatures has been a mainstay of the literature on fantastic beasts since the early 1800s. In 1802, the French naturalist Pierre Denys de Montfort wrote extensively about this subject, thereby formalizing views on octopuses the size of warships. His work was not well received; his credulity and the fantastic claims he made meant that few subsequent writers accepted his conclusions.



Tales of giant, dangerous cephalopods have been around for centuries, but the nature and identity of the animals concerned was never really clear. Were they squids or octopuses or something else? During the early 1800s, naturalist Pierre Denys de Montfort argued that at least some giant cephalopods were in fact gargantuan octopuses. He promoted the view that these were formidable monsters, capable of attacking and sinking ships.

Heuvelmans also investigated these stories and devoted a substantial portion of a book to what might be regarded as the most famous sea monster of them all – the mighty kraken. Today, one can't mention the word 'kraken' without being reminded that the legendary beast is merely the old name for a scientifically accepted and familiar ocean-going beast, the giant squid *Architeuthis*. Seeing as *Architeuthis* was only recognized by science in 1857, it might seem that knowledge of the kraken shows how people were aware of this creature for centuries beforehand. But despite the popularity of this explanation, it's almost certainly incorrect. If we look critically at descriptions of the kraken, it isn't ever squid-like at all. In fact, it proves difficult to pin down the kraken's appearance precisely given that different authors provided such diverse descriptions. Much of the research recounted here was published by Michel Meurger in 1999 and Charles Paxton in 2004.

If we look at accounts from the 1600s, we see that the kraken of the time is very similar to an even earlier monster: the 'island monster'. This huge creature – sometimes described as being one and a half miles (that's 2.5 km) in circumference – was said to attract prey animals with some sort of magical breath, to possess spines and plant-like growths on its surface and to look so like an island that sailors landed on it, set up camp and then drowned when the creature awoke and submerged. The inspiration for the 'island monster' is not entirely clear, but it might have been based on stories about giant turtles, whales or even the emergent tops of sea volcanoes or enormous masses of floating pumice that sometimes form after volcanic eruptions. It's also been suggested that stories of giant crab-like monsters, said to attack ships with their claws, inspired tales about the kraken.

What's notable is that nothing in those early kraken accounts make the creature sound especially squid-like. During the 1750s, Erik Pontoppidan, the bishop of Bergen, described the kraken both as an island-monster and as a long-armed creature that possessed 'antennae'. He implied that it might be a starfish-type or squid-type animal. It's this reference to squid-like features that was latched on to by later authors. The island-monster stories about the kraken merged with other accounts that undoubtedly described squids and other cephalopods, the primary contention of popularizers like Heuvelmans being that a great many of these accounts referred to observations of *Architeuthis*.

In fact, there's simply no reason to think that the old view of the kraken – the one that existed prior to the 18th century – described a tentacled or squid-like creature, or was anything to do with *Architeuthis*. And while squids and other large cephalopods were known to the authors of the 17th century and before, they were only described in vague terms; none possessed the unusual features of *Architeuthis*, and most of them likely represented encounters with common, familiar cephalopod species. We can reject the claim that *Architeuthis* is the explanation for krakens and other sea monsters.

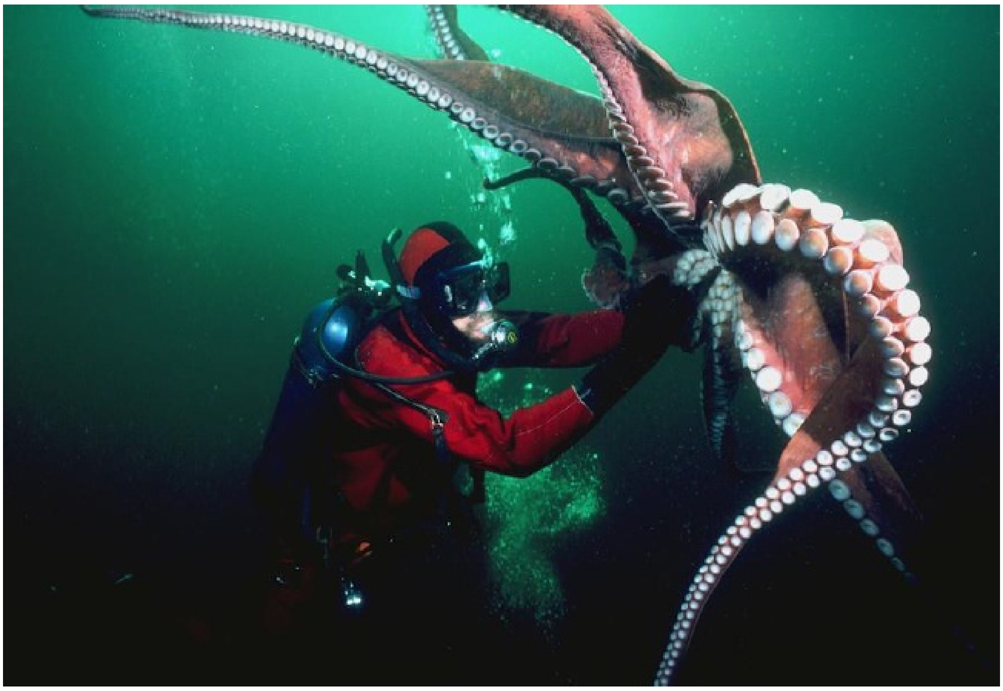
Thanks to its alleged links with the mythical kraken, *Architeuthis* is a staple animal of the sea monster literature. Moving away from kraken lore, there have also been numerous claims of absurdly large *Architeuthis* specimens well exceeding the biggest recorded specimens in length and mass. The accepted record total length for *Architeuthis* – that is, the length that includes the (normally retracted) long, slender pair of feeding tentacles – is 16.8 m, but there are stories where people *claim* to have seen squids 30 m long or more.

The best known of these is J. D. Starkey's account from some undated moment during World War II.

Starkey (who had his account published in *Animals* magazine in 1963) described how he was fishing at night from the side of an Admiralty trawler some distance off the Maldives, using a cluster of light bulbs to attract fish. At some point he realized he was looking at the eye of an enormous squid, and he then proceeded to walk the length of the ship, viewing the squid with the aid of a torch. The animal was longer than the entire vessel, meaning that it was over 53 m long – and this apparently didn't include the feeding tentacles, which ordinarily more than double a giant squid's length! Maybe Starkey's account is true, but it might also be wholly fictional – letters written to magazines cannot be regarded as especially reliable pieces of evidence.

Accounts of this sort have been bolstered by tales of people reputedly seeing squid sucker marks as much as 46 cm and even 60 cm across on sperm whales. Suckers of this sort would be suggestive of squids 60 m long. As argued by Richard Ellis in his 1998 book *The Search for the Giant Squid* and in articles on *Architeuthis*, these stories most likely represent half-truths, exaggerations or hoaxes. One photograph that's supposed to show gargantuan sucker marks on a piece of whale skin actually shows sucker marks that are just 27 mm wide, but errors and exaggerations mean that the marks in the photo have sometimes been said to be substantially bigger.

Despite these stories, the largest authenticated giant squid sucker scars are actually no wider than 37 mm, and tales of scars more than ten times wider cannot be considered to have been based on reliable evidence. One explanation for the large size of the sucker scars seen on whales is that the scars have increased in size as the whale has grown. Another is that people have misidentified the circular marks caused by ringworm as squid sucker marks, and another is that people were actually seeing circular bite marks made by sharks. Greenland or sleeper sharks can produce circular marks of this kind – this sort of behaviour is not unique to the small cookiecutter sharks – and these large animals could easily create sizeable bites.

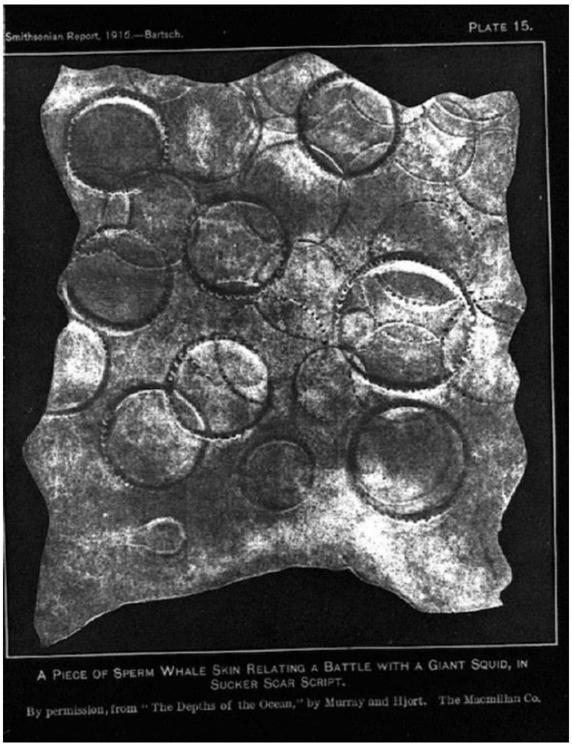


Giant members of the octopus family – like this giant Pacific octopus – are impressive animals, sometimes exceeding 6 metres (19.5 feet) in arm-span. However, stories abound of octopuses much, much larger. Are these exaggerated? Do they concern exceptionally big specimens or new, giant species? Or are they the result of confusion, misidentification and fabrication?

Less well known than the claimed existence of super-sized giant squid is that cryptozoologists have also proposed the existence of truly enormous octopuses as well. Officially, the largest octopus is the Giant Pacific octopus *Enteroctopus dofleini*, very large specimens of which can weigh about 70 kg and have an arm-span of about 6 m. Giant individuals with an arm-span of as much as 9.8 m and a weight of about 115 kg have also been mentioned, though the records concerned are somewhat dubious. Compared to the vast majority of the world's 300 or so octopus species, these record-holding Pacific giants are enormous. However, even one of these exceptionally big animals would be dwarfed by the stupendously big octopuses endorsed in the cryptozoology literature.

The story of the giant octopus is the stuff of legend. It all started with the discovery of a huge lump of animal tissue on the beach of Anastasia Island off the Atlantic coast of Florida, found in 1896. This object was 1.8 m tall, 2.1 m wide and 6.4 m long. It was light pinkish in colour and had several flap- or tube-like structures emanating from its sides, looking somewhat like the bases of missing arms. Because the nearest city is St Augustine, the object is usually termed the St Augustine blob.

Local naturalist DeWitt Webb and cephalopod expert Addison E. Verrill concluded that it was the body of a huge octopus, and Verrill took this seriously enough to name it as the new species *Octopus giganteus*. He imagined that, when alive, it might have had an arm-span of 60 m. But this proposal was mostly forgotten and ignored in following years. Verrill himself gave up on it, thinking it more likely that the blob was the decomposing remains of a sperm whale.



Smithsonian Report, 1916.—Bartsch.

PLATE 15.

A PIECE OF SPERM WHALE SKIN RELATING A BATTLE WITH A GIANT SQUID, IN SUCKER SCAR SCRIPT.

By permission, from "The Depths of the Ocean," by Murray and Hjort. The Macmillan Co.

Books that discuss *giant* giant squids often mention the discovery of enormous sucker marks found on the skin of sperm whales. In reality, none of the sucker marks that have been recorded or photographed are especially big. In any case, the biggest ones reported so far may have changed size as the whale itself became larger.

As is the case for several of the mystery animals discussed in this book, the concept of *Octopus giganteus* was resurrected during the 1950s, and since then the proposed existence of this alleged gargantuan octopus has been taken seriously by several researchers. It turns out that tissue samples of the St Augustine blob had been collected and retained, and were still available for study. A 1986 biochemical analysis by cryptozoologist and biochemist Roy Mackal concluded that the sample was more consistent with an octopus identity than a mammalian one. This was countered by a 1995 study in which Sidney Pierce and colleagues argued that the microscopic structure and biochemistry of the sample was inconsistent with an octopus identity and that it was, in fact, identical to mammalian collagen. While it's sometimes difficult to know which of two competing opinions should be favoured over the other, the evidence assembled by Pierce and colleagues has to be regarded as more thorough and more convincing. The identification of the St Augustine blob as whale collagen is also backed up circumstantially by the other blob-like carcasses that have been investigated since – we'll look at those cases in a moment.

Nevertheless, a few cryptozoologists cling to the idea that the St Augustine blob really did represent an octopus of unprecedented size, and they link this imagined beast with tales of giant, octopus-like monsters – called 'lusca' and 'him of the hairy hands' – described by the peoples of the Bahamas. In particular, Gary Mangiacopra and Michel Raynal (both well known cryptozoological investigators) argued in several articles of the 1990s that Pierce *et al.*'s conclusions were in error, and that the St Augustine blob really was a giant octopus. Mangiacopra and colleagues even argued that the carcass seemed to possess the remains of wing-like fins on the sides of its body. In view of this, they suggested that it wasn't an 'ordinary' octopus as usually imagined, but a member of the swimming cirrate octopus group *Cirroteuthidae*. These octopuses are odd compared to those with which we're more familiar. Their arms are lined with single (not double) rows of suckers as well as fleshy tendrils called cirri, and large webs connect their arms all the way to their tips. It has even been suggested that this weird anatomy is reflected in the Bahamian name 'him of the hairy hands', this perhaps being a direct reference to those hair-like tendrils on the arms. On the basis of this reclassification, Raynal proposed the new scientific name *Otoctopus giganteus* for this imagined species.

But for all this enthusiastic theorizing, the opinion that has to be regarded as most likely is that the St Augustine blob really was a rotten mass of tissue from a whale. Those stories about tentacled monsters of the Bahamas and elsewhere are of the same sort that people tell the world over. They're exciting tales of dangerous creatures, perhaps inspired by experiences with animals that really exist (like known squid and octopus species), but with little to tell us about the existence of unknown species.

Globsters, Gambo, Trunko and Other Carcasses

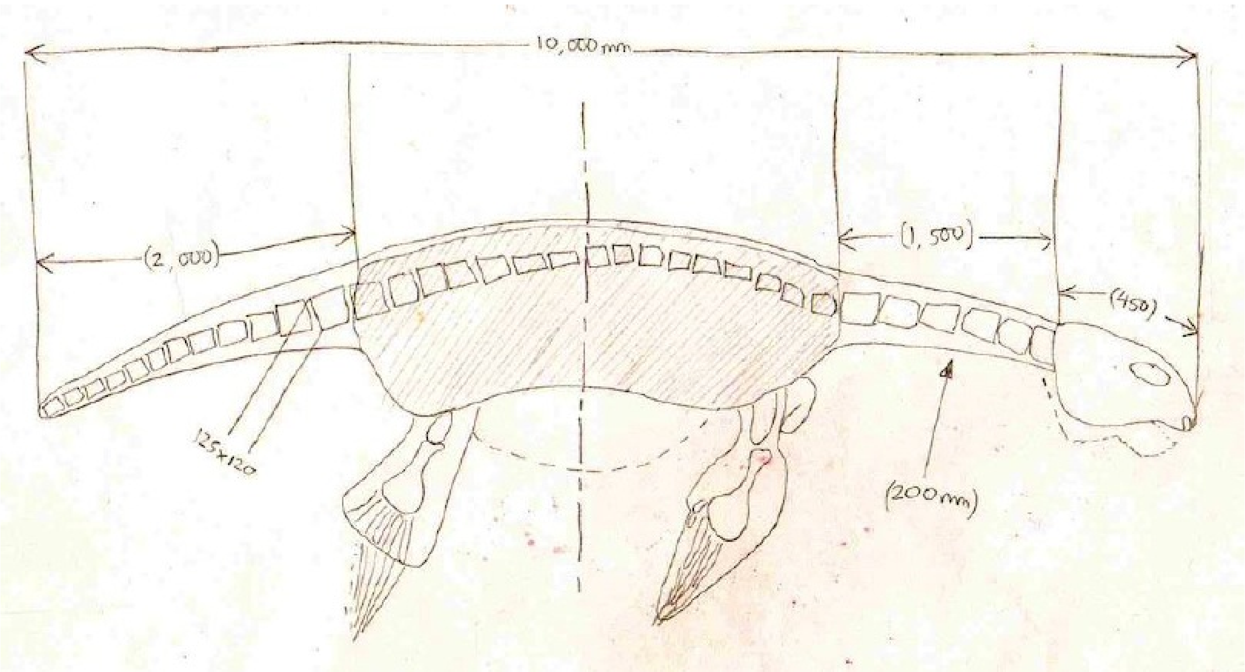
Over the years a number of similarly amorphous rotting carcasses have been found at coastal locations around the world. After the St Augustine blob, the most famous is the one discovered on Tasmania in 1960. The extreme durability of these masses is demonstrated by the fact that it was still there on the beach two years later. Ivan Sanderson wrote about this case and proposed the name *globster* for the object, a term now widely used for rotting masses of this sort. The Tasmanian globster was about 6.1 m long, 5.5 m wide, 1.4 m thick, and suggested to be between 5 and 10 tonnes in weight. It was flattened and disc-like, with massive lobes at its presumed front edge and five or six gill-like slits.

Perhaps, some suggested, this was the body of a hitherto undiscovered giant, flat-bodied, bottom-dwelling invertebrate. In their 1982 book *Living Wonders*, John Michell and Robert Rickard drew attention to the superficial similarity between this benthic pancake monster and the hide, a sea monster from Chilean folklore, said to be a flat-bodied octopus that dwells on the ocean floor, has numerous eyes fringing its edges and engulfs humans and other animals by absorbing them into its mass. Michell and Richard even played with the idea that there might be eyewitness descriptions of this sort of animal. In an unreferenced second-hand account described in a 1957 book, a diver supposedly watched a gargantuan pancake monster, ‘about one acre in extent’, rise up from the darkness to engulf a swimming shark. The story may well be complete fiction, but it’s a good one.

As intriguing as these speculative ideas are, they have to be rejected in favour of the rotting whale carcass idea. What seems to happen is that as a floating whale carcass decomposes, the bones drop away, leaving a ragged, rotting, lumpen mass formed of the skin and associated muscles and ligaments. Lumps of tissue that correspond to the muscles located in between the ribs seem to explain the lobed appearance on various of these carcasses. This mass is mostly formed of the tough protein collagen. As collagen breaks down, it frays and takes on a furry or hairy look. This explains why globsters and other alleged sea monster carcasses are often reported as being furry or hairy. Collagen is also incredibly tough and resistant, a giant mass of collagenous tissue easily lasting years, even decades, before breaking up and decaying.

Moving away now from the grotesque, boneless globsters, a number of very different large, decomposing bodies have been discovered on beaches and shores worldwide, caught in nets or observed at sea. Typical features include giant size, a furry or woolly external surface and a body shape reminiscent of plesiosaurs or mosasaurs.

The best known of these is the New Zealand carcass of April 1977, caught in the nets of the Japanese trawler the *Zuiyo-maru* 48 km east of Christchurch. The carcass – caught accidentally at a depth of about 300 m, and photographed and measured prior to its disposal – was heavily decomposed, its rotting musculature and underlying skeleton being completely exposed. It was 10 m long, possessed a small head on a long neck, two pairs of large, wing-shaped paddles, and a 2 m-long tail section that lacked any sort of tail fin.



This famous diagram of the 1977 *Zuiyo-maru* sea monster carcass was produced by a member of the crew, and it certainly seems to support the idea that the carcass might have been that of a modern-day plesiosaur. However, this diagram was produced from memory after the carcass had been discarded. It’s also inconsistent with data showing that the carcass was that of a shark.

Superficially, it looked something like the rotting body of a plesiosaur, and this is exactly what some people implied that it was – among them, a number of biologists who really should have known better. A press conference was held by the Taiyo Fishery Company Ltd. (the company that owned the *Zuiyo-maru*) and international interest in the case was substantial, newspapers and the fishery company both focusing on the idea that it really was a sea monster carcass. Fishing vessels from Japan, Russia and Korea even returned to the place where the carcass had been snagged in an effort to relocate it. An academic conference was convened, the result being a series of technical papers published in 1978.

To cryptozoologists and other people familiar with 'sea monster carcass' stories, this all sounded very familiar. Numerous such carcasses have been reported over the decades, and, to date, every single one has turned out to be a decomposed shark (most typically a basking shark *Cetorhinus maximus*) or whale, the appearance of which is peculiar and unfamiliar to non-experts. As a shark carcass rots, the gill region decays and falls away, the dorsal fin and soft sections of the tail fray and disintegrate and the large bones of the face and jaw region are lost, leaving only the box-like braincase. The result is what's termed a 'pseudoplesiosaur' – a seemingly long-necked, small-headed animal with two pairs of flippers and a long tail.

Here lies the identity of the *Zuiyo-maru* carcass, something realized by those familiar with shark anatomy even before any proper analyses had been conducted. Flexible rod-like fibres collected from one of the carcass' fins were analysed and found to be remarkably similar to the horny fibres – termed ceratotrichia – present in shark fins. These fibres exhibited the same properties as ceratotrichia (changing shape when heated, for example) and proved similar to them in chemical composition. The microscopic structure of the carcass's tissue also revealed a tissue composition unique to sharks. Furthermore, the carcass also looks exactly like rotting basking shark in overall anatomy: a decomposed dorsal fin is visible, it's proportioned just like a basking shark and its 'skull' matches in appearance a basking shark braincase, a hole on its upper surface corresponding to a distinctive feature of the shark braincase termed the epiphyseal foramen.

'Monster carcasses' of this sort have been washing up on the beaches of the world for as long as sharks, whales and other big animals have existed, and their wrongful identification as the remains of living plesiosaurs and other animals unrecognized by science has been a constant theme since the early 1800s at least. Perhaps the first to be reported was the so-called Stronsa Beast of 1808, a long-bodied, maned, six-limbed animal carcass, apparently 18 m long, discovered on the coast of Stronsay (then often spelt 'Stronsa') in the Orkney Islands. Despite excitement about the possibility of this being a genuine monster carcass, it was correctly identified in 1809 as a shark, and we can verify this today since the surviving drawings of its bones depict features unique to basking sharks. Among the additional carcasses of this type reported since, some have been given amusing names. Examples include the 'Scapasaurus' carcass of 1941 (found close to Scapa Flow in the Orkney Islands), the 'Block Ness Monster' of 1996 (a skeletal carcass from Block Island, Rhode Island, United States) and 'Parkie' (a carcass found at Parker's Cove, Nova Scotia, in 2002).

Examples continue to be reported at the rate of one a year or so. 2015, for example, saw media coverage of a carcass washed ashore at Sakhalin Island, Siberia, that was said to have a bird-like beak and shaggy fur. The head and jaw shape of the animal (combined with other information, like overall size and shape) proved immediately that it was a decomposed Baird's beaked whale *Berardius bairdii*. Today, a serious interest in the study and interpretation of pseudo-plesiosaurs and other 'sea monster carcasses' has arisen; German researcher Markus Hemmler, in particular, has become well known for his research on this subject. When photographs are good enough, and when physical remains are retained, it's typically easy to pin down the identity of these carcasses with precision. Work of this kind helps dispel the sensationalistic and frequently unscientific proclamations of the media as well as those of creationists (people who deny the existence of deep geological time and evolution, and who instead think that the world and all of its living things was created by a deity just a few thousand years ago), but it also has a function as far as improving our knowledge of the natural world goes: we're learning more about the way in which large animal carcasses break down during decomposition and also adding to our knowledge of where the animals occur and how they're distributed.

Let's move on now to those few carcasses that have supposedly been very different from globsters and pseudoplesiosaurs. Among them is the famed beast of Bungalow Beach, Gambia. In 1986, *BBC Wildlife* magazine published a letter from one Owen Burnham that recounted the tale of his 1983 discovery of the beached carcass of an unidentifiable marine animal. This carcass was about 4.5 m long, possessed long, narrow jaws with terminally positioned nostrils and about 80 sharp teeth, a slender, pointed tail, and two pairs of paddles (though one rear paddle was apparently torn off). Burnham's Bungalow Beach beast was given the tongue-in-cheek nickname 'Gambo' in a 1993 magazine article, and since then has become a routine feature of books and articles on sea monsters and mystery carcasses.

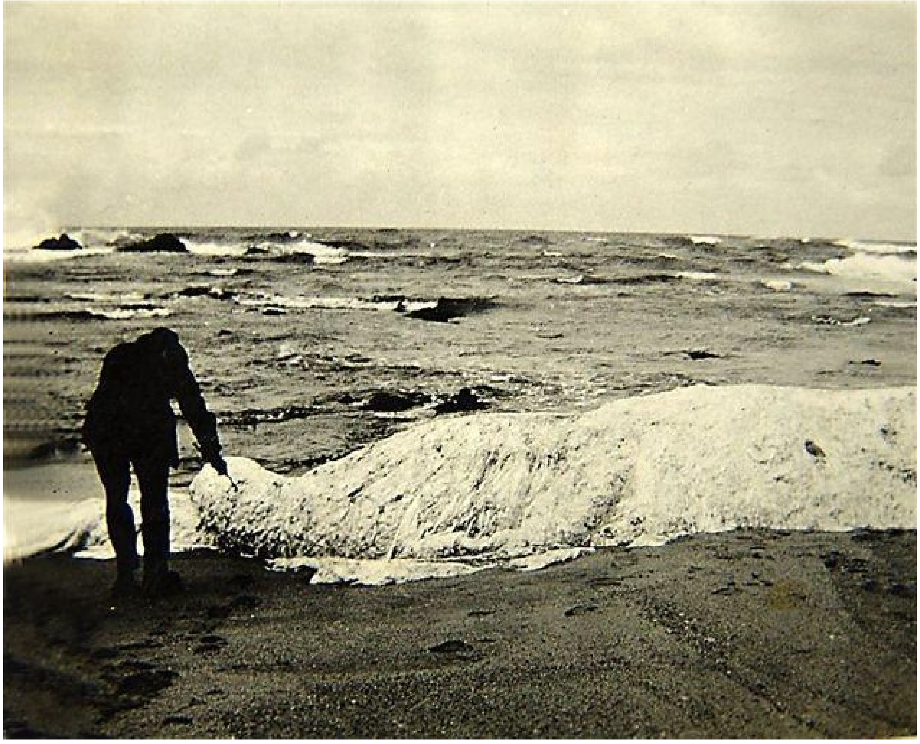
This case was considered at length by British cryptozoologist Karl Shuker, who collected first-hand information on the carcass from Burnham himself: by tabulating the anatomical details described, Shuker compared the Bungalow Beach carcass with a list of potential candidate identities, including living cetaceans and the members of various fossil vertebrate groups, including the seagoing metriorhynchid crocodyliforms of the Mesozoic, the short-necked plesiosaurs called pliosaurs and the Cretaceous swimming lizards called mosasaurs. His conclusion was that the Gambo carcass seemed to match metriorhynchids and pliosaurs most closely. This conclusion has to be seen as part of the prehistoric survivor paradigm mentioned earlier – of a way of looking at mystery creatures as descriptions of species belonging to groups otherwise known only from the fossil record.

However, before the concept of a modern-day metriorhynchid or pliosaur can be considered at all seriously, we have to think about the more likely possibility that the carcass – assuming it existed in the first place – was that of a dolphin, beaked whale or other long-jawed cetacean. Cetaceans of several species (a classic example is Shepherd's beaked whale *Tasmacetus shepherdi*) can look surprisingly reptile-like in facial anatomy when they've been decomposing for a while, and damage to the tail flukes, dorsal fin and skin on the body could conceivably create the impression of an animal with an unusual complement of fins and limbs. Having said that, the exceptional possibility remains that a freak cetacean with a fluke-less tail or extra flippers was observed – animals of both sorts have been observed and photographed in the wild. In 2006, a bottlenose dolphin with a pair of perfectly formed hind-fins was captured off the coast of Japan, and grey and humpback whales completely lacking tail flukes have been seen on many occasions.

According to interview data collected by the Centre for Fortean Zoology, at least some members of Burnham's family identified the carcass as that of a small cetacean. It should also be noted that Burnham's description is inconsistent in some aspects. He stated, for example, that genitals or mammary glands could not be observed or were 'too damaged to be recognizable', yet the carcass was lying on its belly, meaning that any details of ventral anatomy could not have been visible at all.

One way of resolving the Gambo mystery is to dig the carcass up and identify it. Alas, this is more difficult than it might seem since a police station has been constructed on top of the section of beach where it was supposedly buried. A few decidedly unofficial attempts to excavate the site have occurred but nothing like the deep, systematic excavation that would actually be needed. For now, the Burnham case remains an enigma, but a cetacean identification for the carcass seems most likely.

One of the world's weirdest alleged sea monster accounts concerns a giant white creature seen 'battling' with two whales off the coast of South Africa in 1924 (and not 1922 as often stated). The day after the 'battle', the enormous carcass of the creature washed ashore at Margate Beach. According to eyewitnesses, it was huge (about 14 m long), covered in white, woolly fur, and possessed a long trunk attached to its head. The mention of 'fur' has always made it seem that the creature was a mammal of some sort, but ... what sort of mammal, exactly? Add in the sort of speculation that's typical for the cryptozoological community, and the inevitable result is the concept of an aquatic, whale-sized, woolly-coated mammal equipped with flippers and a trunked, elephant-like head. The half-serious moniker Trunko (invented by Shuker to accompany the name Gambo) has become popular for this beast. Obviously, Trunko's description fails to match with any known creature, living or fossil. The sceptical approach has been to regard the original carcass as a globster or pseudoplesiosaur, and to dismiss the speculations about a woolly-coated, trunked sea mammal as overly speculative and likely erroneous. The problem has always been the complete lack of evidence.



South Africa's famous 'Trunko' carcass of 1924 was about 14 metres (46 feet) long and covered in white fur. Photos of the carcass have only recently been made public. They show that it was the rotting carcass of a large vertebrate, most likely a whale. The idea that this was really the body of a white-furred, trunked sea monster stems from naivety about the appearance of rotting animal carcasses.

However, it has recently come to light that this lack of evidence is not so complete after all. In 2010, Hemmler revealed (via articles written by Shuker) that several photos of the specimen actually exist, and demonstrate without question that it was indeed a heavily decayed carcass. The photos (thanks to Hemmler and Shuker, now easily findable online) are somewhat ambiguous, but the enormous bulk of the carcass, the large amount of what looks like frayed, badly decayed collagen and the presence of what seems to be a mostly obscured internal skeletal framework suggest that this is another globster –

a rotting mass of whale tissue. The fact that we can't go any further as regards its identification is somewhat unsatisfactory, but at least the idea of a trunked, furry-coated sea mammal can be declared disproven.

Sea monsters of the modern age

As discussed at the start of this chapter, the concept of 'the sea monster' has been with us since antiquity. Over the decades, confused sightings of known seagoing animals (sharks, whales, turtles and so on) have been combined with misidentifications of carcasses, with hoaxes and embellishments – and with unexplained sightings that we might never be able to resolve, like the *Daedalus* encounter.

Our view of what sea monsters are like has also evolved according to the other things we've learnt. The discovery of plesiosaurs seemingly affected the sorts of monsters that people reported, resulting in a decline of sightings involving long-bodied, serpentine beasts. We've also seen in this chapter that a push by cryptozoologists to 'mainstream' the study of sea monsters not only failed but spectacularly backfired, since critical evaluation of Heuvelmans' body of work – the cornerstone work of the field – showed it to be weaker, less reliable and more error-prone than suspected when it was first published.

But claimed sightings of sea monsters don't end with the sorts of accounts discussed so far: modern discussions of the sea monster phenomenon have revolved around sightings made in recent decades, and around older accounts that have only recently come to light. How do these fit into the phenomenon as a whole?

An interesting thing about various of the more recent sea monster accounts is that they seem weird and sometimes overly sensational compared to the old classics. For example, a thrilling story from 1962 describes how five divers, stranded on a raft in the middle of a thick fog off the coast of Florida, were visited by a giant, long-necked monster that attacked, drowned and consumed four of them, leaving one to tell the tale. Some books recount this story as if it's true. The problem is that no real people involved in the event have ever been identified – it's most likely that it originated as a hoax or even a work of fiction.

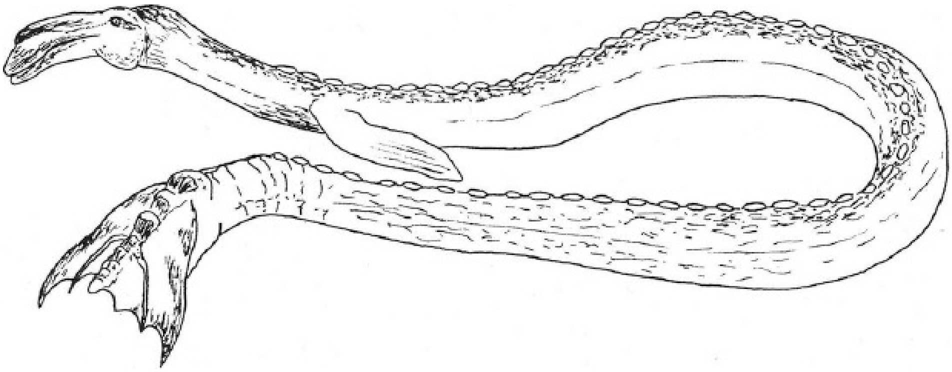
Then there's Robert Le Serrec's amazing encounter of 1964. Le Serrec, his family, and his friend Henk de Jong were on holiday on Hook Island, Queensland, when they discovered an enormous (perhaps 24 m long), tadpole-shaped monster resting in a lagoon. The creature had dark bands across its body and what seemed to be an injury at the base of its tail. The description that Le Serrec provided conforms to the 'yellow-belly' creature proposed by Heuvelmans and it remains unclear whether this was coincidental or not; a possibility is that Heuvelmans initially believed the Le Serrec photos to be genuine and created the 'yellow-belly' in response. The colour photos that resulted from this encounter are clear, compelling and have been frequently reproduced. Unfortunately they're almost certainly hoaxed – even Heuvelmans and Sanderson concluding that the object in the photo was most likely a carefully placed roll of cloth or other material. The most damning piece of evidence against the authenticity of the case – besides the hitherto unconfirmed existence of giant tadpole monsters that rest in shallow lagoons around a highly touristed part of the Australian coast – is that Le Serrec told people before leaving for his trip that he would be making money from a scheme that involved sea monsters.

Other modern sea monster reports are no less fabulous. In 1959, a group of friends using a boat in Deception Bay, western Queensland, observed (on several occasions, and for a period extending for 20 minutes) a large, square-headed marine animal that swam with vertical undulations and possessed nostrils and eyes close to its mouth, short and rounded pectoral fins and a brown, lumpy skin texture. Malcolm Smith wrote about this creature in his 1996 book *Bunyips & Bigfoots* and suggested that it might be a primitive whale of the sort endorsed by Heuvelmans. It certainly doesn't sound like a whale of any kind; *Basilosaurus* and the others Smith had in mind don't match this description, either. It's difficult to make any sort of confident identification: a misidentified dugong is a possibility – and they do occur in the area.

Many sea monster sightings can be explained as encounters with known animal species that were misidentified by the witness, often because they were only able to achieve a partial glimpse of the creature concerned. Several sightings of pale, smooth-skinned sea monsters almost certainly describe encounters with manatees or dugongs, both of which can reach 3 metres (9.8 feet) in length.

Many other sea monster sightings have been reported in recent years – too many to review here. The descriptions involve periscope-like long necks, elongate objects that appear as a low line of humps and monsters said to look like upturned boats. If there are any consistent themes to these sea monster sightings, it's that they rely on ambiguity and vagueness while they suffer from a complete lack of compelling photographic evidence and inadequate demonstration that known species or phenomena can be excluded as the probable explanation for whatever it was that people thought they saw.

Today, one of the sea monsters taken most seriously by cryptozoologists is a horse-headed, serpentine creature reported from the coast of British Columbia and famously associated with a location called Cadboro Bay. As a result, it has become known as 'Cadborosaurus'. The concept of a giant serpentine water beast that inhabits the area goes back to the mythology of indigenous people, but – as usual – the idea that creatures described in ancient lore can be identified precisely with animals described by modern witnesses often relies on a selective picking and choosing of certain descriptions or traits. This is a common tactic of cryptozoological literalism. This practice has to be seen dishonest with respect to the context of the original lore: the creatures concerned may have a few features that match modern depictions of cryptids, but they have a great many others that have to be ignored or explained away.

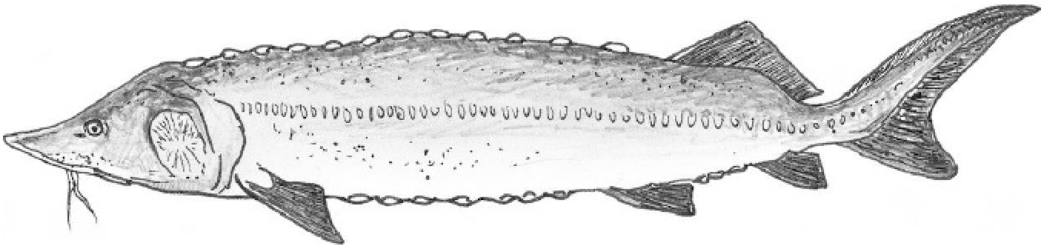


This is the image of 'Cadborosaurus' promoted by its main supporters. It's depicted as serpentine, with a horse- or camel-like head, paddles, a fluked tail and a serrated bony ridge along its backbone. This view is based predominantly on the Naden Harbour carcass – the mangled remains of an unidentified animal discovered in 1937, but since lost. The identity of the carcass remains unknown, but it was most likely that of a shark or sturgeon.

What of the eyewitness reports – ranging from the late 1800s to the present – associated with this monster? These describe an assortment of large sea creatures, some of which were described as bulky, others serpentine and others as long-necked with the ability to erect the neck vertically above the water. A few of the accounts describe a head said to resemble that of a horse, camel or even a giraffe, sometimes equipped with large ears, whiskers or even horns. A small, armour-plated creature (40 cm long), captured at sea by a Captain William Hagelund and kept overnight in a bucket, has been regarded as a baby specimen and used to develop particular idea about the biology and life cycle of ‘Cadborosaurus’. And a carcass extracted from the stomach of a sperm whale in 1937 and known today only from photographs has been regarded as the mortal remains of one of these animals.

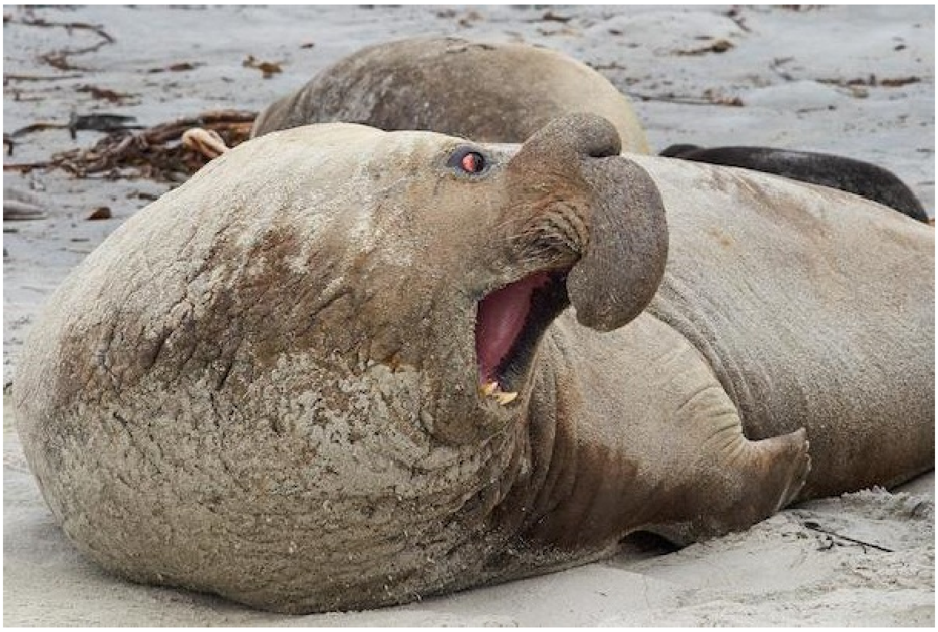
This object was discovered at Naden Harbour whaling station and hence is most usually called the Naden Harbour carcass. Despite being photographed in 1937, it only became well known during the 1990s when it was brought to attention by cryptozoologists Paul LeBlond and Eric Bousfield, both of whom used the photos to support the idea that ‘Cadborosaurus’ is a real species that can be classified and categorized. They argued that this animal was a serpentine plesiosaur and made an effort (via a technical article published in a scientific journal created especially for the purpose) to give it a formal scientific name: *Cadborosaurus willsi*. Many of the eyewitness accounts supposed to describe this creature are one and the same as the ‘merhorse’ sightings grouped together by Heuvelmans; it’s just that LeBlond and Bousfield favoured an utterly different (and even more implausible) identity and evolutionary history for the creature. They regarded it as a plesiosaur, but as a highly modified, furry-bodied, serpentine one, quite unlike the plesiosaurs of the fossil record. A substantial amount of criticism has been directed towards this proposal. It would be repetitive to go through it all here (much of it is easily findable online), but it centres around the fact that ‘Cadborosaurus’ as imagined by these authors is fundamentally unlike a plesiosaur … it is, in fact, difficult to think of an animal *more unlike* a plesiosaur than the ‘Cadborosaurus’ creature imagined by its proponents.

What, then, of the Naden Harbour carcass? With only small black and white photos to go on (none of which have yet been scanned and released at sufficiently high resolution to be all that useful), it’s not possible to provide a confident identification of what it might be. But the ragged look of the tail section, the slender, cylindrical body and the amorphous, lumpy shape of the object overall create the strong impression that it’s yet another rotting carcass of a known animal, perhaps a basking shark or a sturgeon. In fact, the vaguely camel-like shape of the head is strikingly similar to the skull of a sturgeon lacking its snout and facial region. This makes it possible that the mangled and very much incomplete remains of one of these large fish provides the true explanation of its identity. Seeing as the carcass itself is of unknown whereabouts, there’s no way of going any further than this right now.



Sturgeons are large freshwater fish with a mostly cartilaginous skeleton, a shovel-shaped snout and a row of armour plates along the backbone. The largest species – like *Huso huso*, shown here – can reach several metres in length and live for over a century. Some lake monster accounts actually describe encounters with large sturgeon.

Supporters of the idea that ‘Cadborosaurus’ is real argue that all the sea monster sightings of the region – and the Naden Habour carcass – describe individuals of the same species. But this is transparently not the case. Any perusal of the accounts show that (once again) people have reported a large number of different things and then had their descriptions mashed together by those who want ‘Cadborosaurus’ to be a valid biological entity. At least some of the big-eyed, camel-headed reports of ‘Cadborosaurus’ most likely describe encounters with big elephant seals, a vertically surfacing individual of which can have the top of its head more than a metre above the surface of the water. That’s a sizeable, frightening animal when you’re in a small boat. Other accounts describe animals that sound like fur seals (which, incidentally, can be substantially bigger than many people realize), masses of floating vegetation and large pieces of wood.



Male elephant seals are gigantic animals, sometimes over 4 metres (13 feet) long, with a massive head and drooping nose region. Photos often show them with the head high and proboscis inflated, as here, but they don't look like that all the time. Elephant seals are consummate divers, sometimes staying down for more than an hour.

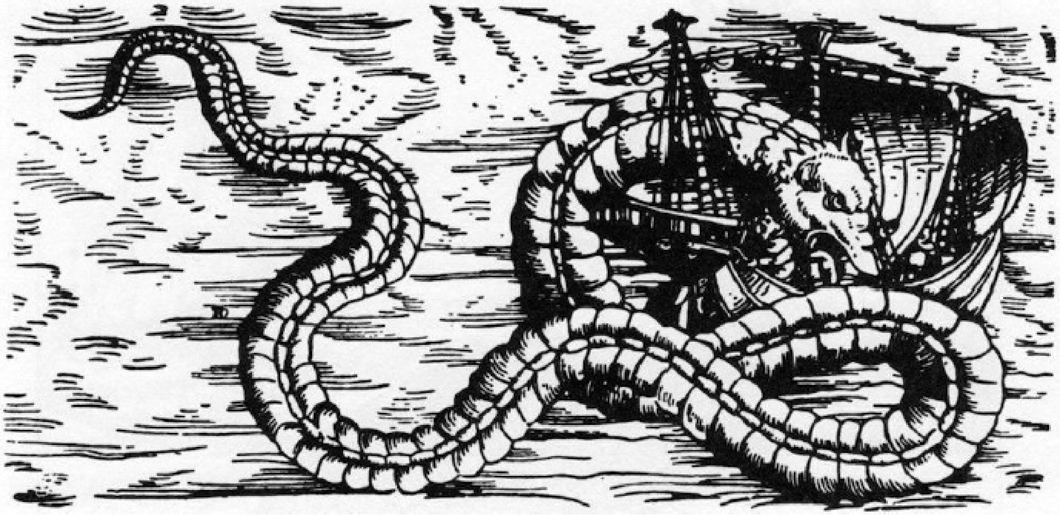
While the possibility will always remain that some of eyewitness accounts relevant to 'Cadborosaurus' *might* be sightings of an unknown species, the fact is that the 'core sightings' – the select few that have shaped the very vision of what 'Cadborosaurus' is meant to be like – are among those that can be explained as sightings of known species or objects.

Where are we now?

With decades of research and thousands of pages devoted to sea monsters behind us, where do we stand now? Nobody seriously interested in zoology or natural history can reasonably doubt the idea that there are new species awaiting discovery in the vastness of the oceans. Studies that have examined the rate at which new large marine animals have been discovered over time provide support for this contention, generally concluding that between 10 and 50 such species still wait to be found. New sharks, bony fishes, cephalopods and even cetaceans are likely among these, and some will be at least a few metres long. But will *any* of them match the creatures discussed in the cryptozoological literature?

As we've seen, Heuvelmans and his followers often pointed to the depictions from centuries past as representing early knowledge of the sorts of sea monsters they endorsed. But the more we've learnt about the way in which ancient maps and so on were compiled, the more obvious it's become that depictions of sea monsters from antiquity were never meant to be literal depictions of real creatures. As explained and explored in Chet van Duzer's 2013 book *Sea Monsters on Medieval and Renaissance Maps*, the monsters on ancient maps and manuscripts were often invented for decoration, or even to make a given region – Scandinavia is the best example – look more dangerous to outsiders than it really was.

At the same time, critical evaluation of sea monster accounts from across history have shown how many – including virtually all of the classic accounts – can either be explained as mistaken observations of known animal species or are so vague that we can't use them as evidence for anything. Several other famous sea monster accounts, often repeated in books on mystery animals, have to be considered doubtful and most likely represent hoaxes or cases of mistaken identity.



This classic image of the 'sea serpent' dates to 1572 and was drawn and redrawn numerous times for use on maps and in books. But rather than being representations of real creatures, many sea monster illustrations of the 1500s were created for decoration or to make certain stretches of sea and coastline appear especially dangerous.

Furthermore, some sea monsters started their life in illustrations as something rather different from the classic sea monsters we usually imagine. This is perhaps best illustrated by the giant, snake-like sea serpent of Scandinavian myth. The impression created by 20th-century cryptozoological literature is that this creature – illustrated by Olaus Magnus on his 1572 *Carta Marina* – was really imagined as a gigantic, vertically undulating marine mega-serpent. But earlier illustrations reveal how Magnus' sea serpent started out as a giant land serpent that took to swimming at sea, and was still associated with sea caves. In his *A Description of the Northern Peoples*, published in 1555, Magnus described and illustrated his sea serpent as a creature of 'the cliffs and hollows of the sea-coast' that leaves these caves to prey either on land animals (including 'calves, sheep and pigs') or on marine ones. Magnus wasn't depicting a real animal, but a mythical concept popular in Scandinavian lore of the time: that of the lindorm, a serpent that originates on land as an ordinary snake, becomes gigantic as a consequence of its gluttony and eventually takes to life at sea, where it continues to grow and to prey on ever-larger victims.

Similarly, the horse-headed sea monster that's still a standard part of the cryptozoological roster – think of Heuvelmans' merhorse and Bousfield and LeBlond's 'Cadborosaurus' – are the direct descendant of the hippocamp or hydrippus, a sea-dwelling, fish-tailed horse that started its career as a decorative beast used in heraldry, pottery and artwork. But as explained by Daniel Loxton in his 2013 book (co-authored with Donald Prothero) *Abominable Science!*, this original version of the hippocamp was never thought to be a real animal – it was a mythical steed or chariot-pulling animal associated with the mythological characters like Poseidon. The image of this creature was popular in the Middle Ages, in large part because Roman and Greek literature was widely regarded and read; hippocamps thus made their way into the bestiaries of the time. They were also adopted as symbols for the marine realm in general, hence their appearance in astrology. Hippocamps were also popular in Norse lore, though it's unclear whether they had the same precise origin as those depicted by the ancient Greeks and Romans – they might instead be mythified versions of walruses.

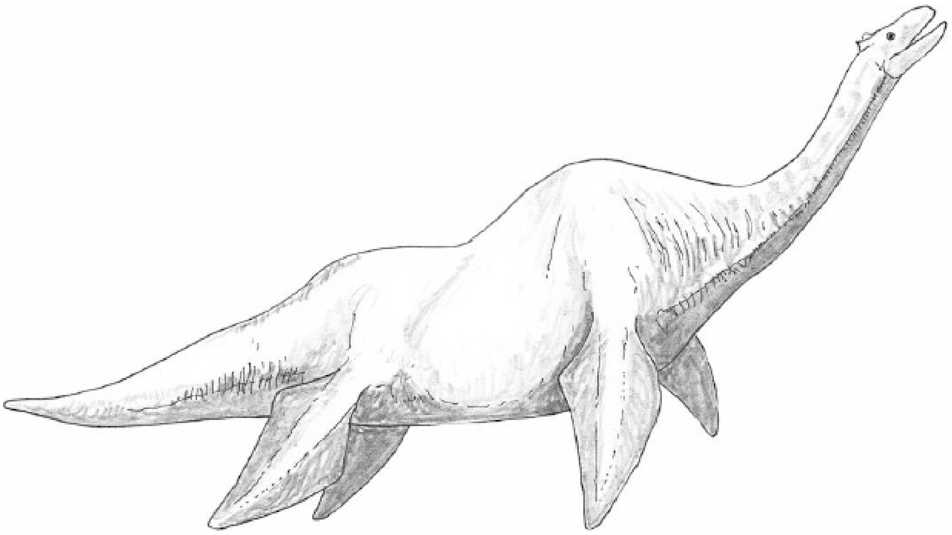
There certainly are large, weird and monstrous animals in the oceans – and new species may well be among them. But rather than resolving or shedding light on the sea monster mystery, we have to conclude that Heuvelmans and other cryptozoological researchers promoted an unrealistic and misleading interpretation of the subject. Sea monsters are the personification of our fears and ideas about the sea, and the notion that age-old myths and stories about seagoing beasts would all prove to be based on undiscovered, flesh and blood animals has proved naive and misguided.

Chapter 3 - Creatures of Loch and Lake

Among the most famous mystery animals of them all is the fabled Loch Ness monster, known popularly as Nessie. This is a classic mystery beast that's been the subject of innumerable books, articles, TV documentaries and movies, and is associated with a substantial tourist industry. Great numbers of people visit Loch Ness, and Scotland itself, because of the monster's fame. The conventional 'flesh and blood' explanation for Nessie sightings is that a large, undiscovered animal (most likely a vertebrate of some sort) awaits discovery in the loch, and monster proponents have entertained a great many ideas as far as the biology, behaviour and natural history of the alleged beast are concerned.

Loch Ness is a famous tourist destination and the largest lake (by volume) in Britain. It and its shores have been extensively used as places of settlement, transport, agriculture and recreation for centuries and the idea that it might serve as some remote refuge where a giant unknown animal might lurk unseen does not appear reasonable.

On the one hand, the possible existence of Nessie is often regarded as silly, as a joke, and as something that's good enough for tourists and children but otherwise lacks serious merit. On the other hand, the possible existence of the creature has been taken so seriously that loch-side vigils, the use of underwater vehicles and sonar sweeps have all been arranged. In 1975, monster proponents Robert Rines and Peter Scott (the latter famous for his work in global conservation and setting up the World Wide Fund for Nature and the Wildfowl and Wetlands Trust) managed to get a technical article on the creature's existence published in *Nature*, one of the world's foremost scientific journals. They argued that the creature needed a formal scientific name and termed it *Nessiteras rhombopteryx*. That name wasn't intended to be a joke (several people have noticed how it's an anagram for 'Monster hoax by Sir Peter S') – Rines and Scott really were supporters of the monster's existence.



An enormous number of different ideas have been entertained concerning the appearance and identity of the Loch Ness monster. This particular view of the monster, positing it as a long-necked, hump-backed animal with diamond-shaped paddles and small horns or snorkels on its head was published by Robert Rines and Peter Scott during the 1970s.

What makes the Loch Ness phenomenon especially interesting from a sceptical perspective is the extraordinary diversity of creatures that people claim to have seen in and around the loch. This diversity requires either that a large number of unknown giant animals await discovery in this well-explored, well-populated, much-studied region *or* that the entire phenomenon is more of a 'human' event – a result of people's preconceptions, their tendency to make mistakes when observing animals and events and the way in which experiences are interpreted within a cultural context. People who grow up in Scotland (and indeed in any human culture) are not blank slates when it comes to perceiving, interpreting and recalling events. We're all loaded with ideas about what the world is like, and those ideas influence our perceptions and interpretations.

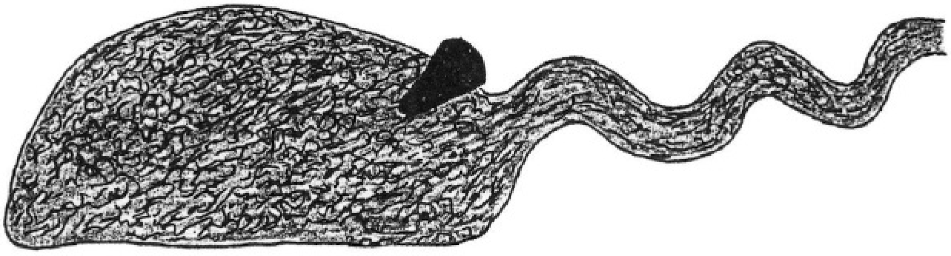
First, a few things about the nature of Loch Ness. Loch Ness occupies a great valley called the Great Glen, a geological feature 100 km long associated with a fault that marks the boundary between two geological land masses. The loch is enormous: more than 36 km long, and 2.7 km wide, it contains more than 7.5 km^3 of water. Its peat-stained waters are notoriously murky, making visibility poor beneath the water and enhancing the loch's mysterious, unfathomable nature. Dark or murky waters are a common feature of lakes said to be monster-haunted. Loch Ness is no remote, far-flung lake in an obscure corner of the world. It's a gigantic, prominent landmark that's been an important location in military campaigns, transportation and settlement for hundreds of years. In view of this, it's telling that there was no tradition or claimed presence of a monster prior to 1933, an issue discussed further below.

The early history of the Loch Ness monster has been told many times. Sightings of the monster were first reported during the 1930s. These received enormous media coverage and suddenly the loch and its monster were international big news. Why did the monster only become known to the world at this time? The suggestion most often made is that 1933 saw the completion of a new road along the loch's edge. This construction led both to a great disturbance of the banks of the loch and to improved visibility for passers-by.

Maybe there's some truth to this 'improved visibility' hypothesis, but perhaps more important is that the time was ripe for a global lake monster craze. One of the biggest pop-culture events of 1933 was the release of the movie *King Kong*. People were enthralled by the idea of giant, exotic monsters and the impact of this film was considerable. There was talk of people being turned away from packed theatres and of cinema-goers being viscerally shocked by the reality of the on-screen monsters. *King Kong* doesn't just feature its eponymous antihero, but also *Tyrannosaurus*, *Brontosaurus*, pterosaurs and other creatures from prehistory.

It was a single sighting that really got the Loch Ness monster phenomenon off the ground – that reported by holidaymakers Mr and Mrs F.T.G. Spicer in August 1933. Their sighting was odd relative to how Nessie is usually imagined since they described a land-based creature, likened to 'a dragon or prehistoric animal' seen crossing the road. A few accounts predating the Spicers' have been interpreted as showing how things were afoot at the loch at the time. The most often repeated are a 1930 sighting of a mysterious wave reported by 'three young anglers' and a 1933 description of a large 'rolling and plunging' animal witnessed by local hotel owners Mr and Mrs Mackay. That last sighting was reported in the local newspaper by Alex Campbell, an important and recurrent figure in the entire Loch Ness affair. There's also the strange Fordyce 'camel' account of 1932, described below.

The Spicer account – *the* original, classic Nessie account – was always ambiguous. Mr Spicer described a greyish, bag-shaped blob with a long, undulating structure at its front end. An object suggested to be a lamb or small deer was apparently being carried by the creature. Over the years, the description became increasingly sensational. It started out as 2–2.5 m in length but gradually increased to 9 m. The Spicers discarded the 'lamb or small deer' idea, eventually deciding that the structure concerned was the end of the animal’s tail, though quite how this corresponds with a feature supposedly seen in the animal’s shoulder region is difficult to reconcile. In some renditions it’s implied that the creature was moving with its body curved into a U-like shape, the head and tail pointing in the same direction.



In 1933, Mr and Mrs Spicer claimed to see a blob-shaped Loch Ness monster with a long appendage, apparently in close association with a small deer or lamb. The monster crossed the road some distance in front of them. Several people have sought to explain this peculiar sighting over the years. They most likely saw a mass of bounding deer.

One suggestion is that the Spicers saw an otter crossing the road. Rupert Gould – responsible for bringing the sighting to attention in the first place – concluded that they’d seen a group of deer crossing the road. As revealed by Gould’s biographer, Jonathan Betts, Gould came to regret including the Spicer account in his Loch Ness monster book of 1934, writing ‘Were I rewriting the book, I should have omitted this case. I think the Spicers saw a huddle of deer crossing the road’. A number of clues add weight to this proposal. The ‘undulating motion’ described for the creature matches the bounding motion typical of a mass of running deer and the ‘lamb or small deer’ was probably a juvenile in the middle of the huddle. The location at which the sighting occurred – a vegetated road verge close to a track that goes through a conifer plantation – is an ideal place for deer to feed.

Perhaps an encounter with a real animal or animals does lie behind the Spicer account. However, a case can also be made that the account was inspired by the release of *King Kong*. As pointed out (independently) by veteran Loch Ness researcher Adrian Shine and author Daniel Loxton, the creature described by the Spicers has a suspicious similarity to the amphibious sauropod dinosaur that attacks people in a scene in that movie. The dinosaur in the film moves in similar fashion to the Spicers’ monster, is of similar colour and texture, has its limbs and feet obscured from view, its tail is curved around the side of its body and it behaves as a vicious predator that attacks and carries off prey. Swept up in hype about the film, it’s plausible that the creature the Spicers described was inspired by the long-necked monster of the film. We even know that the Spicers had seen the movie, since Gould asked Mr Spicer about it in an interview.

Of course, we’ll never really know whether the Spicers really saw anything, if they fabricated the account after being influenced – consciously or unconsciously – by the movie *King Kong*. Regardless, Nessie was then established as an amphibious, long-necked monster of reptilian form, similar to a sauropod or plesiosaur. This image of the beast was to remain the mainstream one, and has done so up to today.

The excitement generated by this sighting caused people to look back in time for accounts predating the 1930s, to make the monster more enduring and real than had been realized prior to this point. Articles by Campbell and others claimed that people were aware of Loch Ness monster accounts stretching back to the 1800s and 1700s, even though other people of the time contradicted such claims. Constance Whyte’s 1957 book *More Than A Legend* established the concept of a ‘monster tradition’ predating modern times. Particularly well known and oft repeated is the claim that St Columba was at Loch Ness in AD565 and drove the monster away using a stern voice and the magical power of the cross.

Whyte’s claim is undermined by the fact that investigators who wrote about the phenomenon during the 1930s, namely Gould and Oudemans, regarded Nessie as a sea monster that had only recently made its way into the loch, presumably via the River Ness. If we go through *all* the pre-1930s legends, references, stories and anecdotes that have been linked at one time or another with the monster, as Ulrich Magin did in 2001, we find that they don’t relate to Loch Ness at all. They describe objects that are not relevant to the concept of Nessie (for example man-made rafts covered in vegetation); are reports of seals, large fish or cetaceans; or are second- or third-hand reports that only saw print after 1930. Or they’re vague references to water monsters or spirits of the sort widely associated with Scottish lakes and pools.

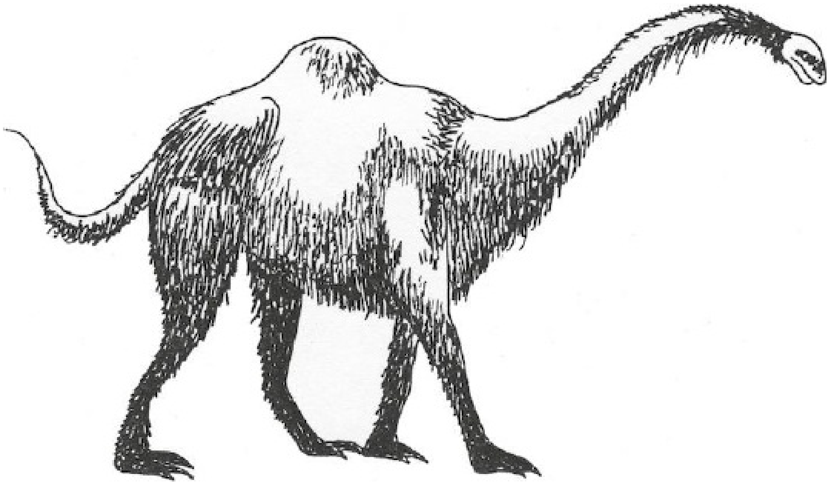
The St Columba story centres on the crossing of the River Ness, not the loch, and describes a man-eating monster with an open mouth. Linking it to the Nessie concept is dubious; moreover, like many a hero from ancient (and particularly Catholic) lore St Columba was credited with magical events and the banishment of terrible creatures wherever he went. Stories like this were never meant to be interpreted as factual news accounts, anyway.

The absence of any obvious monster lore or history of sightings predating the monster’s rise to fame during the 1930s endorses the view that Nessie was ‘invented’ at this time.

Nessie comes ashore, again

Nessie is, of course, generally perceived as a water creature and one that's equipped with a humped back, large paddles and a long neck. But numerous land sightings have also been claimed. These fascinating accounts refer to a wide variety of creatures that are often described with a high degree of detail, sometimes referring to specific actions and behaviour. *If* all of these accounts consistently described the same anatomical details and same aspects of behaviour, they might be taken as providing support for the monster's reality. But they don't, and instead describe radically different monsters. Furthermore, investigation by Loch Ness expert Dick Raynor has shown that most can now be explained.

The Spicer account described previously is the most famous land-going monster sighting but it was (supposedly) preceded in 1932 by a report of a long-legged, long-necked, shaggy-furred, camel-like creature. Though linked with the Loch Ness monster, the sighting actually happened more than 3 km away from the loch's edge. This animal, reported by Colonel Lewis McPherson Fordyce (later a deputy lord lieutenant of London), sounds like a zoological impossibility. Fordyce didn't report his encounter until 1990, meaning that there was a lag of 58 years in which his memory could have become distorted or mixed with other experiences. However, there might be a rational explanation for what he saw.



Several extremely odd animal sightings have sometimes been included in the canon of Loch Ness monster accounts. Among these is Colonel Fordyce's shaggy-furred 'camel' of 1932 (though the sighting was not actually reported until 1990). The sighting occurred some distance from the loch's edge.

Deer hunting in the highlands traditionally involves the use of trained ponies that wear specially designed saddles that allow the pony to carry a full-sized stag. A fully laden, deer-carrying pony can look like a peculiar hybrid creature when seen fleetingly and at distance: the deer's bent, shaggy neck and large antlers project from the pony's back, sometimes obscuring much of its neck. If the pony and deer are similar in colour, it's conceivable that their outlines might be obscured in such a way that they could merge into one oddly shaped beast. The idea requires that the person accompanying the pony kept out of sight. Perhaps they were on the animal's opposite side.

A second land sighting from 1933, reported by a Mrs Reid, described a short-legged, hairy, hippo-like creature, 2 m long and equipped with a rounded head and a mane. A few features of Reid's animal – the mane and body size – make it possible that she observed a reclining sika deer.

After the Spicer account, the best-known land-going monster account comes from veterinary student W. Arthur Grant. Grant was driving close to the loch on his motorbike at 1 o'clock in the morning during January 1934 when – so he claimed – a long-necked animal emerged from vegetation at the side of the road and crossed in front of him. It was perhaps 6 m long and passed so close that Grant almost struck it with his bike. He described it as looking like a cross between a plesiosaur and a seal, with paddle-like limbs. Grant drew several different versions of this creature, his earliest attempt being the least detailed. Perhaps he saw an otter and embellished his case over time. It's also possible that he encountered a seal. We know that seals occasionally occur in the loch, and a large one is not a bad match for the creature that Grant described.

Other land sightings were reported at this time. In a 1934 report, the creature was said to have a small head on the end of a long, vertical neck and to possess paddles and two low humps. A particularly odd account comes from 1936 when the monster was reportedly seen by landscape artist Alastair Dallas. Apparently, it was hauled up on rocks at the water's edge and viewed at a range of just a few metres. Dallas said he was able to sketch it from life, but later lost the sketch, redrew the creature from memory during the 1970s, but then relocated the original and found it similar to his version from the 1930s. Regardless, the creature he claimed to have seen was odd indeed. About 6 m long, it was long-bodied and vaguely fish-shaped, with one or two floppy dorsal fins, limb-like pectoral fins, a long, robust neck, dangling wattles on its cheeks, small eyes and a sucker-like mouth. It was apparently feeding on algae growing on rocks. There are some vague similarities between Dallas' drawings and a sturgeon, a fish mentioned on occasion as a possible explanation for Nessie sightings. But the similarities are vague and the creature that Dallas illustrated considerably differs from sturgeons: sturgeons have plate-like dorsal scales, lack a neck region or dangling wattles and don't prop themselves up at the water's edge to suck on rocks.

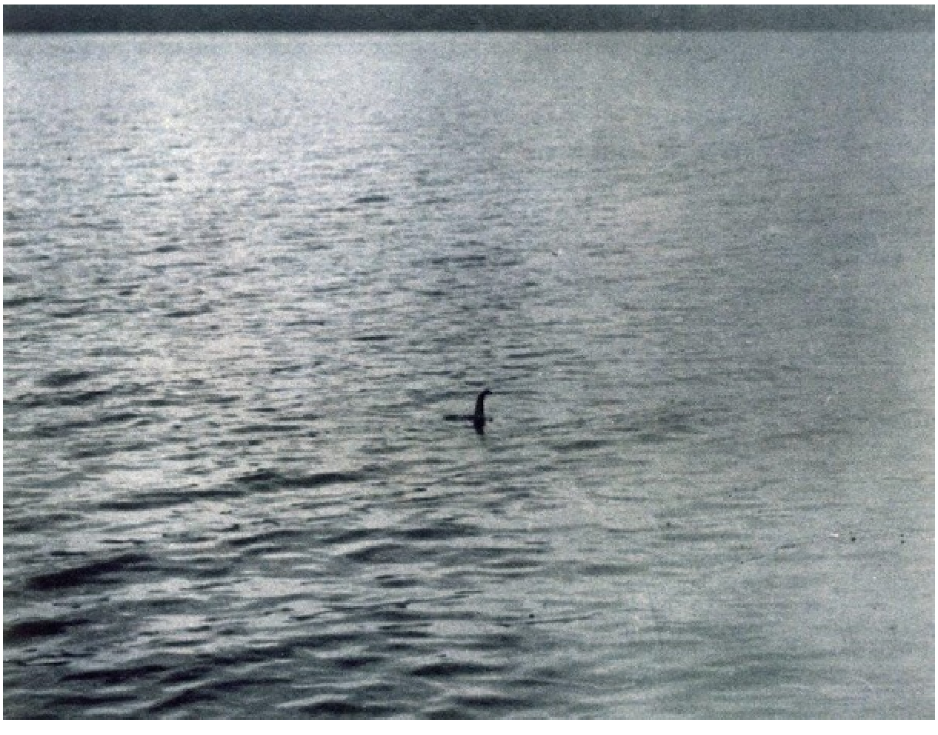
One of the most familiar land-based accounts comes from 1960 when Torquil Macleod watched a creature through binoculars as it rested half of its length on a steep bank at the loch's edge. It was enormous – perhaps 18 m long – and had broad paddles and a long neck and blunt head that created the impression of an elephant's trunk. Investigator Ronald Binns argued that there's no way that Macleod could have observed what he claimed given his location and the binoculars he was using. It's also been pointed out that Macleod was the very opposite of a neutral witness; he was, wrote Binns, 'passionately committed to a belief in monsters' and even moved to the area specifically because of Nessie. This may be irrelevant as goes his sighting. Or is it?

There's also a 1962 account made by a holidaying American named Arthur Copit in which the creature was heard breathing and browsing from a small tree. When witnessed by the unnamed woman that Copit was with, it was of a long, tubular appearance. Other land-based sightings have been reported too, the most recent dating from 1999.

A literalist response from cryptozoologists is that, despite this diversity of descriptions and interpretations, there may well be a real, undiscovered animal at the core of the reports. But the fact is that there's simply no reason to think that there is, as is clear if we look at the evidence – such as it is – marshalled in support of the monster's existence. There's no way that descriptions of long-legged camel-like creatures, giant fat-bodied plesiosaurs, hippo-shaped animals, road-crossing otter-like beasts and wattled sucker-mouthed creatures can be descriptions of the same type of animal. The only logical conclusion that can be drawn is one found elsewhere in this book: Loch Ness monster accounts consist of a mixed bag of hoaxes, tall tales and mistakes; there is no convincing, consistent biological signal emerging from that pool of accounts; and people engineer or construct monsters based on their preconceptions, pet ideas or influences.

Photos, films and sonar evidence

By far the most famous of Nessie photos – and, indeed, one of the most famous monster photos of all time – is the so-called 'Surgeon's photo' or 'Wilson photo' of April 1934, reportedly taken by London-based gynaecologist Robert K. Wilson. This black and white image is typically regarded as *the* classic image of the monster, Wilson's fine, upstanding reputation adding credibility. It shows a dark object that looks superficially like an erect-necked swimming animal with a small head perched at the top.



The original version of the Wilson Loch Ness monster photo shows the monster as a small object in the middle of the frame, with a large expanse of the loch behind. Even the image shown here is not the whole photo – the edges of the original are, today, battered, frayed and torn.

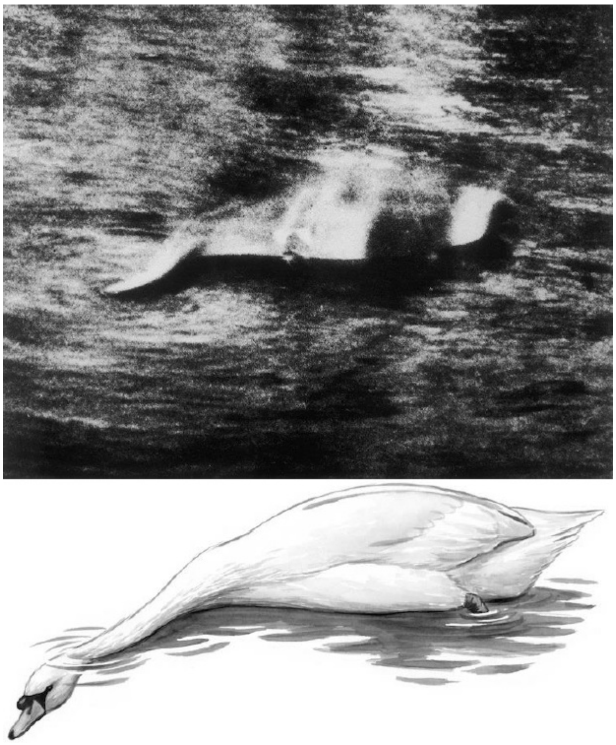
The version of the photo most frequently seen in books is actually a cropped segment of a much larger image. The original shows a large area of the loch's surface and even the far shore. A second photo is said to have been taken a few seconds later. It shows what might be the same object but in a more submerged pose, and with a straight head and neck rather than the classic bird-like pose of the original. However, there's no way of knowing whether it shows the same object, or if it was taken at the same place or same time. The pattern of ripples certainly looks very different.

Attempts to explain the object as a swimming waterbird or the tail of a diving otter are unconvincing since it really doesn’t resemble either of those things. Furthermore, the ripples show that it was small – certainly less than the 1.2 m tall suggested by some analysts, and probably less than half this size. During the 1990s, stepbrothers Ian Wetherell and Christian Spurling claimed to have hoaxed it in conjunction with Marmaduke Wetherell, a big-game hunter who, in 1933, used a hippo foot ashtray to fake a series of monster footprints. It’s assumed that Marmaduke expected his employer (the newspaper the *Daily Mail*) to play along, but they didn’t, and instead named and shamed him as a fraudster. It was this event that seemingly caused him to seek revenge. Supposedly, Marmaduke’s stepson Spurling mounted a monster-shaped piece of plastic on top of a toy submarine. Marmaduke and Ian then visited the loch and took the famous photo. They deliberately chose a part of the loch where the water might make the object look large. Wilson’s upstanding reputation meant that he was a good proxy; he saw it as an excellent practical joke.

Maybe this hoax story is true. But it’s often all too tempting to accept ‘confessions’ of this sort as bringing an end to events and allowing things to be declared ‘case closed’. Of course, accounts of this sort are often anecdotes that shouldn’t be accepted without question – we have no proof that the model submarine story is really true. There’s no ‘smoking gun’, like the submarine itself, for example. But regardless of the backstory to the Surgeon’s photo, it never did look like a photo of a real animal in any case. The ripples on the water show that the object is tiny, and it doesn’t look like a real animal. It should almost definitely be written off as a hoax, whatever the truth of the Wetherell-Spurling story.

There are a great many other alleged images of the Loch Ness monster. While many are featured in books and TV shows on Loch Ness, few appreciate how much is known regarding the background stories to all of these images. Critiques of all Loch Ness monster photos have been published by investigators, including Roy Mackal, Henry Bauer, Ronald Binns and Steuart Campbell. All the photos can be explained as misinterpretations, hoaxes or photos of ambiguous objects that cannot be taken as evidence of an unknown animal.

Predating the Surgeon’s photo is the famous (and famously difficult to interpret) Hugh Gray photo of November 1933. This image shows a sinuous structure accompanied by a large amount of blurriness. Gray said that it depicts a large animal – perhaps 12 m long – with a grey, glistening skin. Two lumps along its length have been interpreted as possible limbs by some. Gray said that five photos were taken at the time. He also claimed to have seen the monster six times prior to being interviewed by Constance Whyte in 1955.



Hugh Gray’s Loch Ness photo of November 1933 is another famous image alleged to show the monster. In reality, the image almost certainly shows a swan, its head submerged beneath the water’s surface (at the left of the image). Blurriness, possible double exposure and strong shadows around its edge make the shape somewhat difficult to discern.

The sheer ambiguity of the photo has resulted in efforts to claim it as support for various ideas about the monster’s identity ... according to some, it’s a giant *Tullimonstrum* (a worm-like, swimming invertebrate, less than 40 cm long, that lived about 300 million years ago); to others, it’s a quadrupedal, salamander-like animal. In recent decades, the half-serious notion that it looks like the head of swimming dog with a stick in its mouth has become popular. While this appears true if you know what to look for, this is clearly a case of pareidolia (the phenomenon whereby people perceive patterns such as figures and faces in random masses of information). The object is actually a swan, its head submerged and its pointed tail and leg clearly identifiable.

Another famous photo was taken by P.A. MacNab in 1955 and shows two gigantic black humps photographed close to Urquhart Castle. This photo might be a hoax because it seems that there are two different versions. Both show the (apparently moving) monster in the same place yet one shows the reflections of trees while the other doesn't. It should also be said that the monster looks suspiciously dark compared to other objects in the photo. Whatever the truth behind this image, the 'monster' within it is best explained as a wave or wake.

In April 1960, a short section of film supposedly showing the monster was obtained by monster hunter Tim Dinsdale. Dinsdale was an aeronautical engineer who became so fascinated with Nessie that he made more than 50 excursions from his London home to the loch in an effort to see, photograph or film the beast. His footage shows an amorphous dark lump that moves in a sinuous path across the far side of the loch. Aware of the need for a piece of control footage, Dinsdale also filmed a boat moving across the loch following roughly the same trajectory. Dinsdale's contention, and that of other Nessie supporters, was that the footage demonstrated how different the confirmed boat looked from the 'monster hump' that he filmed. Yet the two are suspiciously alike. If the boat that Dinsdale filmed were dark-coloured, and if the weather conditions at the time of filming were more overcast, it would look about identical to the 'monster hump' he filmed.

Dinsdale gained some credibility for his footage when he had it examined by JARIC (the Joint Air Reconnaissance Intelligence Centre), the UK's image interpretation intelligence agency: JARIC reported that the film showed an object that was moving too fast to be an ordinary boat. However, Loch Ness investigator Steuart Campbell pointed out that JARIC's analysts failed to take into account the breaks in Dinsdale's film, which occurred as he stopped filming and wound the camera's clockwork motor. Once those pauses (about every 20 seconds) are accounted for, the object's speed matches that of an ordinary small boat. Close-ups of the object in the film also show that the tallest point of the object strongly resembles a human figure. Also notable is that a local farmer regularly travelled across the loch at the same place, and at the same time of day, as Dinsdale filmed his monster.

One of the most remarkable Nessie photos was taken in May 1960 by Peter O'Connor. The photo reveals a close-range body emerging from the water in the dark, sometimes described as looking like a loaf of bread or inflated plastic bag. A slim, blunt-tipped head and neck are visible ahead of the body. O'Connor explained that he had waded noiselessly into the water and held the camera high above his head. This photo (and the accompanying story) was deemed suspicious from the start. Loch Ness investigator and ichthyologist Maurice Burton visited the spot just two weeks later and found the burnt fragments of large white plastic sacks and some string connected to a circle of large stones, all of which he considered damning to the credibility of the claim; he did, however, neglect to mention that he'd known O'Connor in some kind of advisory capacity. A stick that matched the shape of the monster's head and neck was later discovered at the same place by retired journalist Angus Forbes.

The loch-side debris discovered by Burton might not be as incriminating as some writers have assumed. Burnt plastic, string and other debris could merely be the junk left by a camper woefully devoid of environmental concern. Regardless, it could be that O'Connor's monster was exactly what it looked like: an upturned boat and a wooden head. Dick Raynor was able to establish that O'Connor owned and used a particular kind of folding kayak termed a Tyne Prefect. The hull of this vessel is a perfect match for the object in O'Connor's photo.

Two of the most interesting alleged Nessie photos were taken in close succession in August 1972 via an underwater camera equipped with a strobe flash. Obtained by a crew from the Academy of Applied Sciences headed by Robert Rines, both seem to show large (between 1.2 and 2 m long), diamond-shaped paddles with a central supporting ridge or rib. These photos were seen at the time as powerful support for the monster's reality and were used by Scott and Rines in their 1975 technical pronouncement about the beast. Later, it was discovered that both images had been extensively retouched and show nothing more than the muddy floor of the loch and silt suspended in the water. A diamond-shaped groove on the mud matches the mark the camera rig would have left on the loch floor and it seems that this became mistaken for an object. At some point, an unknown party embellished the photos, apparently by painting on to printed copies.

Two other underwater photos, taken by the same research project on 20 June 1975, have been the focus of much interest. One shows what looks like an animal's torso with a limb and a long, slender neck. A second shows a gnarly, squarish mass with a smooth, convex central bulge and a series of projecting horns.

These images have been interpreted by Nessie proponents as showing a swimming, plesiosaur-like Nessie, and a close-up of a mysterious ugly face with an open mouth (called the 'gargoyle head' photo). Subsequent investigation revealed that the camera taking these photos was not suspended in open water as thought, but was on or in contact with the loch floor. The size of the objects does not make sense, either. Using the estimated distance between the object and the camera as determined by the illuminated area of the flash, an evaluation of the 'body and neck' photo determined that the object pictured was less than 50 cm long. The 'gargoyle head' photo is normally shown rotated by 90° relative to its original orientation. Seen in its actual pose, it looks like a few lumps of rotten wood on the loch floor, surrounded by mud. That's almost certainly what it is.

One final image merits mention and is, in some ways, the most interesting of all. This is the Shiels photo of May 1977. Full colour and detailed, it shows the brown, erect neck and small head of a superficially plesiosaur-like animal projecting from the water surface. As usual, the version seen most often is zoomed-in and cropped relative to the original. The animal has a happy look on its face – the image is sometimes called the Loch Ness muppet photo. A prominent white blob is positioned at the neck's base, close to the waterline. Several sources list the photographer as Anthony Shiels. What is not mentioned is that this is 'Doc Shiels', an Irish magician, author, artist and self-proclaimed wizard who's been connected to several monster sightings and photos of dubious provenance. It may be unfair to label them hoaxes since, in view of Shiels' body of work, they might be better interpreted as a form of art.

The 'muppet' photo is certainly not an image of a real animal but more likely shows a model, as are two additional photos that show the same object but in slightly different poses and stages of submergence. Shiels published an article in which he proposed that the head and neck of Nessie is actually a proboscis-like structure that projects from the head of a hypothetical giant freshwater squid he termed *Elephanteuthis*, or the elephant squid. This explains the white blob in the muppet photos: it's one of the squid's eyes. Shiels' article on the elephant squid seems to be written in all seriousness. However, it was more likely intended as a tongue-in-cheek reference to the way cryptozoologists construct putative flesh and blood identifications for the creatures they regard as real out of very little to go on: this is the 'creature building' concept mentioned in Chapter 2.

The 'golden age' of Loch Ness monster photos extended from the 1930s to the late 1970s. Since then, few interesting photos have emerged. A 1982 photo by holidaymaker Jennifer Bruce shows a sinuous 'neck' emerging from the loch surface. It actually seems to be a gull in flight, the neck-like structure being blurred, silhouetted wings. A series of photos taken in 2001 show a nondescript eel-shaped object emerging near-vertically from the water before dropping down and disappearing. A 2011 photo purporting to show the monster's hump was revealed to be a fibreglass model hump constructed for a 2005 TV documentary.

Photos aren't the only pieces of hard evidence used to support the existence of the monster. On numerous occasions, boats equipped with echo-sounding equipment have scanned the depths of the loch. On occasion, craft formed lines or rows to allow the loch's entire length to be scanned in systematic fashion. On occasion contact with unidentified submerged objects was made – objects that were absent minutes or hours later and thus were assumed to have been mobile. Alas, none of these scanning operations have ever produced convincing results and the mysterious moving contacts can fairly be assumed to have been large fish, otters, drifting debris or artifacts of the echo-sounding process before anything else can be concluded. Nessie proponent, chemist and author Henry Bauer has noted how unlikely it is that observers and Nessie-seekers have repeatedly misinterpreted the many sonar traces they've recorded. But this isn't unlikely at all: echo-sounding produces all manner of results that are easy to misinterpret.

Indeed, some of the most 'compelling' sonar records have been completely misinterpreted or even determined to have been hoaxes. During December 1954, the fishing vessel the *Rival III* made sonar contact with 15 m-long object that could only be identified as a 'monster'. As sketched out by the stylus on the paper chart, it had a slender tail, blob-shaped head and large serrations and limbs projecting from its elongate body. A 1972 sonar contact reported by the Academy of Applied Science vessel *Narwhal* was interpreted as showing a large animal with flippers and a multi-humped back. These contacts were made on the same night (8 August) that the famous 'flipper' photos were obtained, and thus the events were linked together.

However, the machines used in these instances just don't work in the fashion imagined by the people reporting these results. Sonar detects the presence of objects, but does not (and cannot) 'read' or convey shapes. The *Rival III* trace was admitted to be a hoax by one of the people involved while the *Narwhal*'s readings were explained by Steuart Campbell as traces of a second vessel nearby and of the loch floor, not of animals at all.

Finally, several bones, dead animals and fossils found at the edges of the loch, have occasionally been linked to the monster's existence. The partial foot of a stuffed crocodylian, supposedly found close to Urquhart Castle, has been linked with the Loch Ness monster by a few aficionados. A great chunk of bone found at the loch side – initially suggested to be part of an enormous thigh bone – proved to be a section of blue whale jaw. The body of an elephant seal was dumped in the loch in April 1972 as a practical joke. Two dead conger eels were found on the loch's shore in 2001. One of the eels contained mackerel within its stomach – evidence that it did not belong to a unique freshwater conger eel population, but was a normal conger captured at sea and likely placed at the loch for a bit of sport.

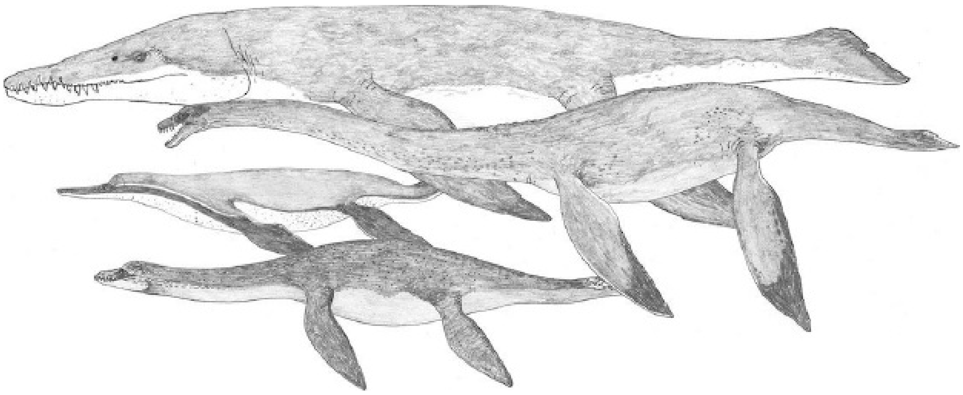
Fossil plesiosaur bones have been found at the loch on a few occasions. All were planted or, in one case, 'accidentally' left there. In 2003, a block of sediment containing a string of plesiosaur vertebrae were supposedly discovered at the loch's edge and linked by journalists to the monster's existence. Not only is the rock type containing the fossil alien to the Loch Ness region, the fossil is obviously millions of years old and of no relevance to the claim of a modern water monster. The same can be applied to the other specimens.

Finally, a long, bony object perhaps 10 cm long with a pointed tip and a few jagged edges was found in 2005. It was supposedly extracted from the carcass of a deer found on the shore. Perhaps, some said, it was one of Nessie's teeth. It was actually the broken antler of a muntjac deer, the whole episode being a promotional gimmick for a horror novel set in the area.

For all these dubious, highly suspicious and downright fraudulent cases of alleged evidence, no genuinely mysterious bone, tooth or bit of a carcass has ever been reported from Loch Ness, nor from any of the many other monster-haunted lakes of the world.

A monster of many faces

Over the years, many identifications have been proposed for the Loch Ness monster. Probably the most popular is that the monster might be a modern-day plesiosaur. Plesiosaurs are a group of marine reptiles that lived during the Mesozoic Era, between about 200 and 66 million years ago.



Plesiosaurs were a successful group of swimming reptiles that existed for over 150 million years. They included long-necked groups like the cryptoclidids and elasmosaurids, short-necked groups like the pliosaurids, and 'mid-necked' groups like the polycotylids. There is no indication from the fossil record that plesiosaurs survived beyond the extinction event at the end of the Cretaceous Period, 66 million years ago.

This proposal seems to be in agreement with claims that the monster has a long neck, large body and paddles or flippers. It's another example of the prehistoric survivor paradigm introduced earlier. However, we have no indication that plesiosaurs survived beyond the end of the Cretaceous 66 million years ago, and the idea that these animals (which are large, have big, obvious bones and are readily preserved as fossils) might have existed for tens of millions of years without leaving any fossils is not likely nor consistent with the good fossil record we have for large marine animals. Cryptozoologists have often pointed to the discovery of live coelacanths – a group of fish thought long extinct until 1938 – as providing validation of the prehistoric survivor idea. But even a big coelacanth is substantially smaller than a plesiosaur, with bones that are tiny, fragile and difficult to identify compared to the large, heavy, readily identifiable bones of plesiosaurs.

The suggestion that the monster might be a giant newt or a member of a group of ancient long-bodied amphibians called embolomeres has also been taken seriously by some Nessie researchers. The embolomere idea was favoured by influential cryptozoologist Roy Mackal, who invented a hypothetical paddle-limbed giant modern-day embolomere as his favoured Nessie identity. Again, this is speculative 'creature building'.

Then there's the idea that it might be a giant mollusc of some sort – perhaps a freshwater squid or giant gastropod – or a gigantic descendant of *Tullimonstrum*, a swimming worm-like creature, less than 35 cm long, known only from 300-million-year-old rocks in Illinois, United States. Other suggested identifications include a long-necked member of the manatee family, a gigantic eel or an especially big catfish. Many of these ideas give off a sense of 'clutching at straws' because they lack any sort of supporting evidence. Especially popular is the guess that Nessie might be a large, long-necked seal. This idea was favoured by Maurice Burton and also promoted by Peter Costello in his classic 1974 book *In Search of Lake Monsters*. Costello argued that lake monster reports the world over were quite homogenous once a few descriptions of reptile-like animals were excluded. He pointed to features of body shape and head, face and tail anatomy that apparently supported this view. He suggested that the animal relied on echolocation, being partially sighted or even blind.

If this long-necked seal idea sounds familiar, it's because Heuvelmans had previously proposed it as the explanation for the long-necked sea monsters he believed in. We know that Costello wrote his book with co-operation from Heuvelmans, and it was Heuvelmans' imaginary long-necked sea monster species – *Megalotaria longicollis* (discussed in Chapter 2) – that Costello regarded as the identity for his freshwater mega-seal. Costello finished one of his book's chapters on long-necked seals by expressing surprise and dismay that scientists at large had not accepted the concept of *Megalotaria*, signing off with 'the mind of the scientist is exceedingly strange, who can know it?'

In reality, the idea that Nessie – or any lake-dwelling monster – might be explained as a giant seal or seal relative (all members of the group are collectively termed pinnipeds) is difficult to reconcile with pinniped biology and behaviour, and also with what people claim to see at Loch Ness and elsewhere. For instance, pinnipeds are noisy, air-breathing mammals that use loud voices to advertize their presence, huffing, puffing and snorting when exhaling and taking breaths at the surface. They haul out on land to moult, breed, suckle their babies and rest. We do not see this at Loch Ness.

A monstrous, long-necked cryptoseal would not just need to be a new species; it would also have to be a completely novel sort of pinniped that has severed ties with the land and hence evolved a number of behavioural and physiological novelties. Again, this is a suspiciously familiar theme: the cryptid represents a newly constructed speculation, an unprecedented innovation in contrast with the rest of its group's evolutionary history.

Beyond Loch Ness: to Ireland, Siberia and elsewhere

It is little known outside the cryptozoological community that Loch Ness is in no way the only Scottish lake reported to be inhabited by a monster. One compendium of monster accounts – Michael Newton's 2005 *Encyclopedia of Cryptozoology* – lists more than 30 Scottish lochs as the rumoured haunts of Nessie-like monsters; this count does not include sea lochs. The creatures associated with these bodies of water are described as semi-mythical 'water horses' or 'giant fish' of the sort spoken of across Europe and North America, or are said to resemble upturned boats or dark humps seen surging across the water.

Second to the Loch Ness beast, the most famous of these is Morag, the beast of Loch Morar. Much that could be said of Nessie has also been said of Morag. It ranges from 2 to 12 m in length, from light grey to black, and – according to reports – is variously humpbacked, multi-humped and/or long-necked.

Lakes across Ireland are also supposedly home to water monsters, often collectively termed horse-eels, water-horses or peistes. Irish water monsters have supposedly been seen right across the country, though with the vast majority of accounts coming from the far west. As with water monsters from Scotland, it's difficult to provide a concise description of what these creatures are meant to look like, since accounts of them are incredibly diverse. The monsters reported from these lakes have variously been described as slim and serpentine, as seal-shaped, as humpbacked and blunt-snouted, as possessing serrated backs and even as being rhinoceros-like in shape. Since the 1990s the idea that a giant, vaguely otter-like creature dubbed the *dobharchú* (pronounced doo-var-koo) is among these Irish water monsters has become popular.

In 1954, several witnesses observed a creature in Lough Fadda, Connemara, County Galway, said to have two humps and a blunt head with prominent dark eyes. One of the witnesses described a peculiar forked tail, but another flatly denied the presence of such a feature. Several monster sightings are associated with Lough Auna, also in Galway, with the most notable describing an object – thought to correspond to the top of the creature's back – that was about 1.5 m long and serrated, with four tall peaks.

These sightings are not all from decades past. A Lough Auna sighting of a humpbacked lake monster was reported in 2005, and one of the witnesses was lake monster expert Gary Cunningham. A 2001 sighting was reported from Sraheens Lough in County Mayo, where Sean Corcoran and his wife saw a large, dark creature that swam across the lake before alighting on a rock and standing on its back legs, giving it a height of about 1.7 m. Curiously, its flipper-like extremities were red or orange.

Maybe some of these sightings were of misidentified seals or otters – both of which could certainly occur in these bodies of water – but it's more difficult to propose identifications for the weirder beasts, like the serrate-backed creature of Lough Auna. One significant problem noted by those attempting to interpret Irish lake monsters as flesh and blood animals is that the lakes concerned are often surprisingly small – too small, it seems, to support a creature of any large size, let alone a population of them. One way of explaining this problem is to posit the creatures as amphibious – meaning they have the ability to move across land to the next lake when required. An alternative possibility might be that the creatures are able to conceal themselves in the thick mud at the bottom of the lakes, many of which are shallow hollows on top of peat bogs. But this is inconsistent with the general idea that the creatures are mammals or, at least, mammal-like, air-breathing vertebrates.

Northern Asia has also long been associated with lake monsters in the mystery animal literature. Indeed, one of the best-known lake monster stories in the world is that of the Lake Khaiyr monster, reported in 1964 by members of a team of geologists from Moscow State University. Lake Khaiyr is in the Sakha republic in far eastern Russia, and information on it is hard to come by. The fact that it supposedly has a monster resident seems to be the only thing anyone ever says about it. The creature – described in detail by biologist Dr Nikolai Gladkikh (though read on) – was a long-necked, blackish-blue quadrupedal reptile with a lizard-like head and a long fin along its back. It was initially encountered while grazing on the bank, then returned to the lake and later surfaced once more. Combine the great amount of detail included in this report with the seeming authority and reliability of the source and the remote nature of the location and we have an ideal, genuine-sounding lake monster report. Could the freezing Siberian steppes really be home to an undiscovered form of giant, cold-adapted, amphibious reptile?

Well, probably not. It turns out that this classic story was a hoax. Gladkikh, the supposedly august biologist who saw the creature, was not a scientist at all but a 'migrant worker' hired as a helper. According to a 2007 interview, he 'made up his story for reasons he could not clearly explain. He concocted it either to entertain himself and his friends or as an excuse for shirking his duties at work.' The idea that the lake was devoid of fish and that birds never land on it turned out to be embellishments.

Ever since the 'death' of the Lake Khaiyr monster, rumours and stories have continued to surface of other equally terrifying and enigmatic Siberian lake monsters. In 2012 anecdotes describing the presence of a monster in Lake Labynkyr were reported in the global press. A photo, used widely in news stories online, shows a dark, distant blob that could be a swimming bird, a piece of floating vegetation or even a diver in a wetsuit. There's no excuse to take these stories any more seriously than the one associated with Lake Khaiyr. The idea of big, unknown creatures living in these lakes is improbable, and we've learnt, time and time again, that vague stories and images of distant objects can't (and shouldn't) be accepted as evidence of anything except that people are still eagerly spinning yarns about Siberian lake monsters.

Champ, Ogopogo and other North Americans

Moving now to North America, the most famous lake-dwelling monsters after Nessie are the creatures associated with Lake Champlain (on the border of New York and Vermont in the eastern United States) and Lake Okanagan in British Columbia (western Canada). Both creatures have friendly-sounding popular names: the Lake Champlain monster is 'Champ', and the Lake Okanagan monster is 'Ogopogo'.

As is the case with Nessie, eyewitness descriptions that purport to describe these monsters refer to a surprising range of different creatures. Objects that look like upturned boats, are serpentine and display coils while moving and are bulky-bodied, long-necked and small-headed have all been described from Lake Champlain, as have horse-headed monsters. There are land-based sightings too. Ogopogo, similarly, is variously said to be serpentine, to have anything from one to 14 humps or arch-shaped body sections, to be horse-headed, to sometimes have horns or ears, to have a fluked, whale-like tail, and to be smooth-skinned, scaly-skinned or have plate-like structures that give it a saw-toothed profile. No matter what the aficionados of these monsters may say, there is simply no way that this number of descriptions can be considered compatible – people are evidently not describing experiences that involve the same single animal species.

Champ has been the subject of a sizeable amount of research and there have been a considerable number of claimed sightings and interpretations. As is typical for lakes said to contain monsters, most Champ sightings are of amorphous dark objects that could be a number of different things. Even lake monster specialists admit that at least some of these encounters most likely represent fish seen feeding or surfacing: Lake Champlain is home to sturgeon, gar, salmon, pike, smallmouth bass and introduced European carp, all of which can look far bigger in the water than they really are, and all of which could well dupe people into thinking that they'd seen a monster were they to get a fleeting glimpse of the animal's back. And some of these fish really can be quite monstrous: sturgeon can exceed 2 m in length, gar in Lake Champlain can be over 1.2 m long, and the pikes of the lake can exceed 1.1 m.

Champ researcher Dennis Hall has claimed that he and his father captured a 30 cm long, fork-tongued baby version of Champ in a marshy area bordering the lake. The specimen was apparently lost at some point, but Hall has said that he later discovered a strong similarity between the animal and *Tanystropheus*, a highly unusual long-necked fossil reptile from the Triassic period (and hence more than 200 million years old). In the absence of any evidence (the captured specimen does not exist) it's impossible to evaluate this claim any further. It has, however, become part of a tradition whereby Champ sightings are interpreted as being consistent with a *Tanystropheus*-like creature in the lake. Like so many cryptozoological scenarios whereby long-extinct animals are theorized back to life, the suggestion that *Tanystropheus* descendants might have survived to the present *and* be responsible for monster sightings made in a North American lake is difficult to take seriously. Not only is there no evidence at all that might support such a claim but also none of the eyewitness evidence reported from the lake describes an animal that sounds at all like *Tanystropheus*.

Hall has claimed several other sightings over the years and is also associated with recordings of squeaks and clicks made in the lake. Hall and fellow researcher Katy Elizabeth suggest that these are noises made by beluga whales ... or, at least, an aquatic animal similar to a beluga whale. Belugas are marine animals that are almost certainly unable to survive in a freshwater lake, and there's no good eyewitness evidence from the lake that would be at all consistent with a landlocked beluga population. Note also that belugas are highly visible whales that frequently lounge and frolic in shallow or surface waters. If they (or members of a similar species) really did live in the lake, people would surely be seeing, photographing and filming them on a regular basis. Whale-like echolocation calls have also been reported from Lake Champlain by animal vocalization expert Elizabeth von Muggenthaler, though these results (obtained in 2003) have yet to published in the academic literature. Their true nature remains mysterious.

By far the most famous of Champ photos is the 'Mansi photo', a single colour image taken by Sandra Mansi while she and her family were on vacation. Mansi has said that the experience of seeing the creature was frightening and that her main concern was getting her children away from the lake. The best-known story about the photo explains how Mansi took it in 1977 but failed to realize its significance until this was pointed out by a friend. The negative had, supposedly, been lost or discarded by then. The photo was brought to the attention of the media in 1981 and received a huge amount of publicity. The most popular interpretation is that it shows a plesiosaur-like animal, raising its head and neck vertically and looking backwards over its arched back. A number of cryptozoologists have said positive things about the Mansi photo, the overwhelming implication being that it's a photo of an undiscovered animal. However, there are problems with the entire aforementioned series of events.

First, the image isn't as clean and tidy as often assumed. There's a dark region on the left side of the 'neck' that doesn't make any anatomical sense at all, and there's the suggestion of dark patches around and adjacent to the 'monster' that destroy its tidy, plesiosaur-like shape. What seems most likely is that it's a chunk of wood that happened to resemble an animal's head and neck. It's not difficult to find large branches, rotten stumps and other bits of woody vegetation around the shores and shallows of a lake that vaguely resemble monsters in profile and proportion. Vegetation submerged or floating in a lake can often surface, sink, rotate and move in a manner that makes it look alive. The movement that Mansi reported perhaps reflected the way this particular mass of wood moved with the current. This is what Ben Radford and Joe Nickell concluded in their 2006 book *Lake Monster Mysteries*, and both interviewed Mansi about the experience and spent time investigating the lake.

Another problem with the Mansi photo is that the story about the photo and where it was taken has changed in suspicious fashion. The lack of the photo's negative has always been problematic (remember: this was in the pre-digital era). Mansi said that she habitually discarded her negatives (a peculiar habit), but her husband said in interview that the negative was burnt or buried on account of the negative feelings attached to it. Mansi has also said that the photo was hidden away in an album – an action that could be consistent with the idea that it was associated with a frightening, unpleasant event. This is, however, contradicted by what she said to journalists in 1981 – that it was pinned up in the kitchen and often looked at by her children and their friends.

Champ investigator Robert Bartholomew (the person responsible for documenting these discrepancies) also found it peculiar that Mansi claimed to be unable to recall where the photo was taken, despite being familiar with the region and describing exactly what happened after the sighting occurred. Finding the locality is important because it might help establish how close the monster was to shore and hence help determine its size. In interviews with Radford and Nickell, Mansi said that she was withholding information on where the photo was taken because she didn't want people to go to the spot and find and kill the monster. This discrepancy would mean that Mansi was simply not being truthful in repeatedly insisting that she couldn't recall the location. And if Mansi was so concerned about the welfare of the creature, it seems odd that she was so keen to make money from the photo. Bartholomew explained how, in 1979, she made a deal with a co-worker to act as her publicity agent. She was described as being 'obsessed with profiting from the photo'.

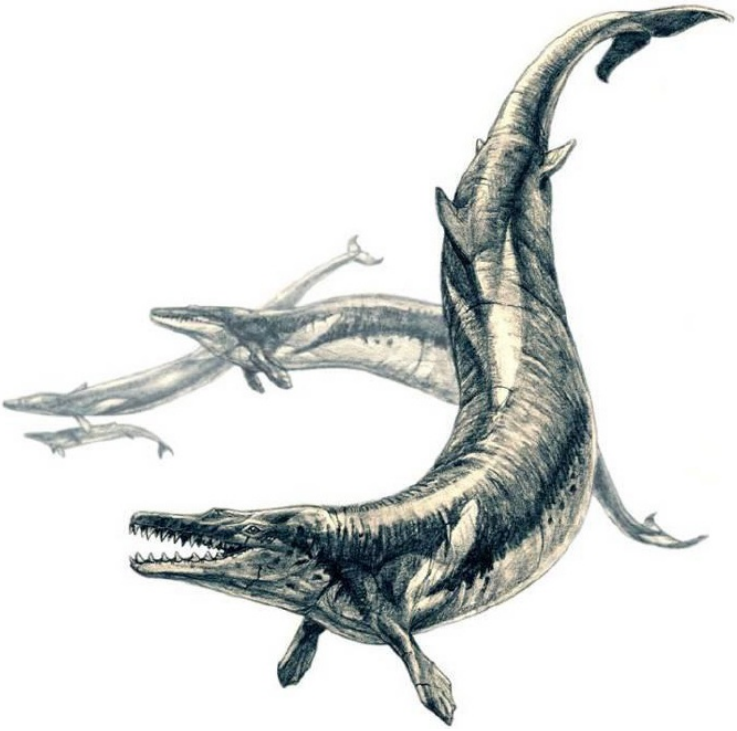
The precise location of the spot at which Mansi took the photo is no longer a mystery, thanks to a detailed investigation of the photo carried out by Dick Raynor. What seems to be a tent, a car and a canoe are all visible on the far shore of the lake, while a tall, cylindrical building (most likely a farm silo) is just visible over the tops of the distant trees. These featured allowed Raynor to determine that the photo can only have been taken at one particular spot on the lake's western shore. It is probably not coincidental that this particular part of the lake is both shallow (about 1.8 m deep) and has a fast-flowing current – exactly the sort of place where woody debris would gather, collide with the lake floor and be pitched over to be visible above the surface.

A 2006 video taken at Lake Champlain by an anonymous person shows a black, shiny, triangular object that looks something like a shark's dorsal fin. A suggestion promoted by some researchers is that it depicts the raised snout of a large turtle (an idea which then inspired an interpretation of all Lake Champlain data as pertaining to giant turtles). But it doesn't look like a turtle's snout at all. It's too triangular, and there are moments in the video where it can be seen to be part of a larger object that extends both ahead and behind of the triangular component. The object doesn't look right for a fish (or mammal) dorsal fin, and what seems most likely is that it's a piece of floating wooden or plastic debris.

A few other pieces of footage purported to show Champ also exist, the 'best' of which is the so-called Bodette film of 2005. Taken from a boat by Peter Bodette and Dick Affolter, it seems to show a vaguely fish-shaped object that seems to be attached to a large, pale block via a slender, tapering segment. There are claims that the full video (which has never been released online) shows important detail, and an interpretation favoured by some is it reveals the creature to be a giant long-necked turtle. The suggestion has also been made that this turtle species is often seen in association with babies that climb on and off its back, hence explaining some of the changes in profile that people report.

Two things are worth noting here. The first is that the object in the Bodette film doesn't really look like a giant turtle at all. What has to be interpreted as a 'neck' is drastically thin – way too thin to be identified as the neck of any turtle – and what's been proposed as a forelimb is in a place that makes little sense anatomically. The video most likely shows the reflection of dockside structures and a pipe, not an animal at all. The second is that we're hearing a very familiar story here: yet again, a giant, long-necked, baby-carrying turtle would represent a significant evolutionary innovation within the history of its group – an animal very different from its known relatives, living and fossil. The fact is, the film (which is only seconds long) is simply nowhere near as good as enthusiasts would like us to believe and it's not currently possible to really say what it shows.

One popular idea about these lake monsters – promoted by Mackal, Greenwell and the International Society of Cryptozoology as a whole – is that they're the descendants of ancient whales known only as fossils, like *Basilosaurus*. Readers with good memories might remember how Heuvelmans favoured the view that basilosaurs had survived to the present and, in evolved form, were the best explanation for various long-bodied sea monster species. As with all of these ideas about 'prehistoric survivors', the notion that whales that lived more than 35 million years ago might have survived to the modern day is not consistent with anything we know about the fossil record, nor is identification of the lake monsters as basilosaurs consistent with the anatomy of those ancient whales themselves. They weren't the incredibly flexible, serpentine creatures that cryptozoologists have always thought. More importantly, eyewitness accounts are simply not consistent with the notion of surviving ancient whales, nor with any one of the specific identifications favoured by cryptozoological literalists.



The idea that ancient whales known only from the fossil record might have survived to the present has been a popular one among cryptozoologists for many decades. The fossil whale most often mentioned in the cryptozoological literature is *Basilosaurus*, a large, long-bodied predator which inhabited the shallow seas of North America, Europe, northern Africa and southern Asia about 40 million years ago. Several cryptozoologists have proposed that *Basilosaurus*-like whales might have survived to the modern day, and might explain sea monster and lake monster sightings. While this is a fascinating idea, it can't be considered likely based on the fossil information we have, nor indeed on the eyewitness evidence pertaining to sea and lake monsters.

Instead, lake monster accounts are (as we've already seen) so incredibly varied that there seems no possibility that they might represent the same kind of unknown animal. Either Lake Champlain and the other monster-haunted lakes are inhabited by more than five or ten distinct kinds of unknown giant aquatic animals, *or* people are reporting encounters with all manner of different animals, objects and phenomena, just as we saw with Loch Ness. There is no single, tidy, consistent biological signal emerging from the mass of data that's been collected.

North American lake monsters are plentiful. Lake Memphrémagog, located on the border of New York, Vermont and Quebec, is said to be home to 'Memphre', a monster described in all manner of terms since 1816 at least. Memphre is said to resemble an eel or snake-like fish, to have two or three humps, to look like a long-necked seal and sometimes to have horns. Payette Lake in Idaho is home to 'Slimy Slim', a creature said to resemble a snub-nosed crocodile, a giant fish, a humped animal with a protective shell or a log-like creature. 'Tessie' supposedly inhabits Lake Tahoe on the border of California and Nevada, Wallowa Lake in Oregon is haunted by 'Big Wally' and so on and on. Over a dozen more lake and river creatures have been popularized by local tales.

Furthermore, lake- or river-dwelling monsters have also been reported from several South American countries, Australia, New Zealand, from Lake Van in Turkey and from other places as well. It almost seems as if people by default see giant water monsters wherever there are reasonably large bodies of water. Any effort to claim that these lakes harbour a single unknown animal species repeatedly observed and consistently described by witnesses has to considerably distort the evidence.

The lake monster: indefatigable cultural icon

The very fact that people associate 'monsters' – giant, weird, dangerous creatures – with large and sometimes not-so-large bodies of water is probably the one crucial, core component of the lake monster mystery. As anyone who has grown up or lived close to any large body of water can attest, a collection of vague ideas, concerns and half-remembered stories are forever associated with such places. Large pools and lakes are said to be unfathomably deep, to harbour unexplained whirlpools, sometimes to possess deep caves and tunnels, to retain the drowned and to be home to large, dark, dangerous creatures: giant fish, monsters with backs like upturned boat hulls and serpentine animals that are giant versions of land snakes. Amphibious monsters disguised as horses or bulls but which are secretly carnivorous and plunge human riders to their deaths in the deep are a motif of certain northern European cultures. They persist, lurking, in our minds as vague reminders that cold, dark waters and the animals in and around them can be dangerous. It's not difficult to suppose that all these stories were invented by rural people for the purposes of entertainment, and to instill in children a sensible respect of things and places that might really be dangerous.

The existence of this cultural landscape is the crucial background to the lake monster phenomenon, regardless of one's opinion or position on cryptozoology. As argued by Meurger in *Lake Monster Traditions*, it's not just that people have similar, culturally ingrained beliefs or suspicions about lakes and their denizens, they've also taken these ideas with them when they have migrated, sometimes merging them with those of other peoples and other cultures. The European colonists of North America saw horse-headed monsters and giant serpents in the enormous lakes of the United States and Canada and interpreted indigenous legends about horned water serpents, 'water panthers' and giant scaly fish-monsters as descriptions of the same creatures. A sort of cultural hybrid legend was the inevitable consequence. This cultural background exists *regardless* of any interpretation of monsters as real, flesh and blood animals.

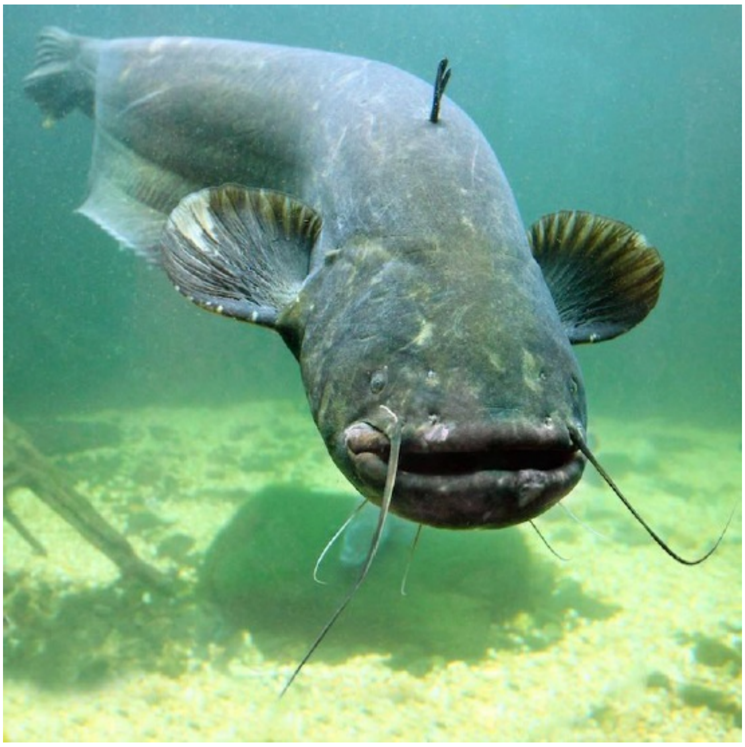
Whenever people visit lakes, lochs, pools and so on, it is therefore inevitable that this cultural background is there in their minds, functioning as a framework for the way in which the world is understood. It's an inescapable consequence of being part of a human culture. Whether we 'believe' in water monsters or not, the fact is that we expect to see or experience monsters at such places.

Comparatively few people are familiar with the unusual phenomena that are associated with large water bodies. These include standing waves, converging wakes, mirages and erupting debris. People are also generally quite bad at identifying animals seen at lakes, including waterbirds and large fish. Many lakes associated with water monsters are surrounded by habitats in which deer forage at the water's edge and even swim from bank to bank. An experience involving any one of these events, animals or objects at a lake already linked in our minds with the possible or imagined existence of monsters is therefore immediately and automatically taken to be a monster sighting.

This explains why lake monsters are so diverse in appearance, why people at Loch Ness and elsewhere claim to have seen humpbacked, multi-humped, long-necked, serrate-backed, bumpy-backed, eel-like, barrel-like monsters: it's a consequence of the fact that they've seen a myriad different phenomena and objects that they've interpreted as a monster.

In short, there is no one answer to the mystery of Loch Ness, Lake Champlain or any of the other lakes or rivers reputed to be monster-haunted. And while animals may be at the root of some eyewitness accounts, there's no one animal in any particular body of water that fully 'explains' the monster concerned. Instead, there are a host of animals that have all been seen and interpreted as 'monsters'.

Compelling evidence for the existence of the Loch Ness monster or any of the other lake monsters has never been found. All the photos are ambiguous, are fakes or can be explained as something mundane. The vast pool of eyewitness encounters is messy and completely discordant, with people describing all manner of different creatures that are said to inhabit the same lake. It seems likely that there are real animals at the bottom of some of these sightings, including giant catfishes, eels, sturgeons, wayward seals, swimming deer, waterbirds and otters. But the popular idea that giant animals of unknown species are behind the sightings – late-surviving plesiosaurs or ancient whales, giant long-necked seals, or freshwater invertebrates of a novel sort – still lacks any and all support, despite decades of effort put into the subject by dedicated, hard-working, hopeful researchers.



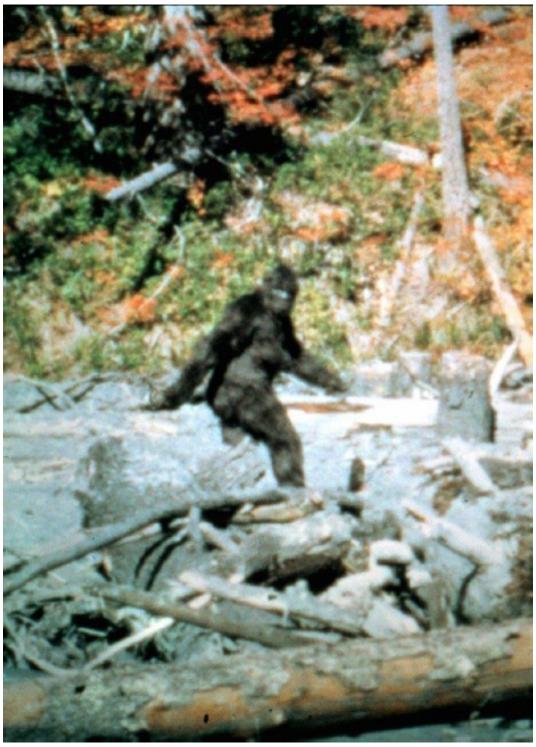
It is often suggested that large catfish might explain some lake monster sightings. Many do occur in places where the Wels catfish (*Siluris glanis*) is either a native or has been introduced as a sport fish. This animal reaches a length of over 2 metres (6.5 feet); and there are historical and unconfirmed accounts describing individuals of up to 5 metres (16.5 feet). However, there's a modern tendency for people to overuse the catfish idea: to posit the existence of giant catfish in a lake where the sightings might not be based on observations of a real animal at all.

What are we left with? A diverse set of experiences whereby people have reported observations of many different things, none of which can be interpreted as providing evidence for new or discovered animal species. Another phenomenon, however, is at work here that's significantly interesting.

If anything is clear from the decades of investigation done on lake monsters and on the sheer indefatigability of sightings and the claims of aficionados, it's that the idea of lake monsters' existence *just will not die*. The notion that giant monsters lurk in lakes and pools has to be regarded as one of the most pervasive, persistent myths of modern times, even at a time when people are increasingly distant from nature, and more divorced than ever from the animals and environments present on their very doorsteps. Yet, remarkably, 'lake monsters' are not obscure creatures outside the realm of normal awareness about the natural world, but an integral part of how people imagine the world.

Chapter 4 - Of Bigfoot, Yeti and Other Cryptohominids

On 20 October 1967 Roger Patterson and Bob Gimlin were out in the wilds of Bluff Creek in northern California, hoping to track, find and film a semi-mythical beast that had been all the rage for the previous ten or so years. They knew it as bigfoot, and also by the name sasquatch, an anglicized version of a word used by the indigenous Coast Salish people of British Columbia. Bigfoot as imagined then – and now – was a fur-covered primate, 2 m tall and presumably closely related to humankind, best known for leaving the eponymous large prints that had been appearing at Bluff Creek since 1958.



This is the iconic frame 352 of the famous Patterson bigfoot film taken in October 1967. It shows the alleged bigfoot – now affectionately known as 'Patty' among bigfoot aficionados – in three-quarters side view, arms in mid-swing and both the face and breasts in clear view.

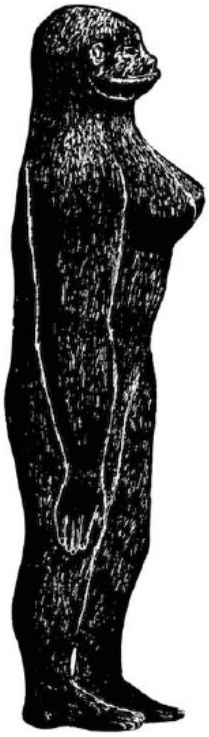
According to the version of events related in the majority of books on bigfoot, Patterson and Gimlin were both on horseback and had already used up the better part of two reels of film. They were exploring the Six Rivers National Forest when, rounding a bend, they caught sight of a large, hair-covered animal standing (or crouching) next to the creek. Patterson's horse reared, throwing him to the ground. He was able to retrieve his camera from a saddlebag and began filming the creature as it walked away. The creature was an obvious female, her large, hairy breasts being displayed clearly during several sections of the footage, especially when she turns to the right to look at Patterson. Realistic-looking muscle tone appears to be beneath the creature's fur, and the gait and amount of arm swing doesn't look quite right for a human. The creature continued walking along the length of the creek until out of sight in the trees. Casts were made of several of the tracks left behind.

And thus history was made. Bigfoot had been captured on film. This short segment of film – variously termed the Patterson film, Patterson-Gimlin film or P-G film – has been the subject of an enormous amount of argument and interpretation and is often considered the most important piece of evidence on the subject. Opinions range widely about the film. There are those who say that the animal in the footage exceeds a human in height, breadth and mass and walks in a manner that cannot be imitated by a person, and there are those who say that it's transparent that this is a man in a suit and that the different sections of the suit, perhaps even including zips and cuffs, are visible. More recently, the idea has emerged that 'Patty' – the pet name used by some researchers for the individual in the film – can be matched to a man named Bob Hieronymus who donned a suit and collaborated with Patterson and Gimlin.

The case built up around this hoax claim was published in Greg Long's 2004 book *The Making of Bigfoot*. It mostly revolves around character assassination of Roger Patterson. Long paints a picture of him as a huckster and charlatan who ripped people off at every turn and was always in search of a quick buck – the exact person you'd expect to pull off a stunt like this. Considering that the film is still relevant today, Patterson apparently succeeded, and made a great deal of money from it.

The core part of Long's case comes from the involvement of supposed suit-wearer Bob Hieronymus. Hieronymus seems to have verified long-term links with Patterson and other people in the area, but claims about his involvement are not exactly convincing: a bothersome amount of inconsistency exists between Hieronymus' description of the suit he says he wore and that of the people said to have supplied it. Hieronymus also seems clueless as to the location of Bluff Creek and the distance to the filming site from nearby locations. Hieronymus may or may not have had some involvement in the case but Long's assertion that he can go down in history as the 'man in the suit' shouldn't be accepted uncritically. As pointed out earlier, people of a sceptical bent are often all too keen to accept 'debunking' claims even though they're often no better than the anecdotes cherished by believers. Furthermore, Hieronymus is actually the fourth or fifth person who has been claimed as 'the man in the suit'. This seems to be an accolade worth striving for: saying '*I was bigfoot!*' sure makes your life sound more interesting.

Whatever the truth of the Bob Hieronymus claims, it remains the case that a number of facts count heavily against the reality of the P-G film. Patterson was not a naive bigfoot-seeker who wandered into the woods and succeeded in doing something that no one else had done before or since. In 1966 – the year before the film was made – Patterson published a book on sasquatch. Therein, he redrew an illustration that shows a gun-toting man watching a bigfoot walking across a woodland clearing. The original illustration that Patterson copied was by Mort Künstler and featured in a 1959 article by Ivan Sanderson, that great popularizer of mystery animal accounts and inventor of so many cryptozoological memes and concepts. The drawing represents an encounter with a creature described by William Roe and said to have occurred in 1955 (thought not reported until 1958).



During the 1950s, William Roe told of his encounter with a hairy wild-woman, observed eating leaves in British Columbia. The creature he described was illustrated by his daughter (her drawing is redrawn here). Roe's creature was highly influential on those who picked up the sasquatch story later on, like Roger Patterson.

What should not be overlooked is how Künstler and Patterson's drawings strongly resemble the scene later filmed by Patterson at Bluff Creek. Apart from having a bigfoot that walks from right to left (instead of left to right), the drawings look exactly like prototype story-boarded versions of what Patterson filmed.

An aspect of the footage sometimes used to support its authenticity concerns the physical characteristics of 'Patty'. Why depict a female with obvious breasts? Surely this would be a silly, if not dangerous, thing to hoax in 1950s America? This view fails to account for the bigfoot images available for inspiration since the Künstler and Patterson illustrations both depict females with obvious breasts too, and this is also true of the drawing that William Roe's daughter produced on his behalf. Roe's view of bigfoot is significant because it was the first to show the creature as a hairy 'wild person'. Before Roe's account, bigfoots were imagined to be indigenous humans. Now they were seen as some kind of 'missing link', the members of a species that was human-like, but intimated to be a relic of the evolutionary transition between humans and other apes.

The P-G film should therefore be considered the direct descendant of images created by Künstler (and Sanderson) and Roe, integral to our view of what bigfoot is meant to look like. This view of the creature crystallized during the late 1950s and 1960s. The circumstantial case against its reality is compelling, even if the currently popular Hieronymus story is questionable or bogus. We can never know 'the truth' because Roger Patterson has long since passed and the suit has never been discovered.

The fact that the P-G footage is measurable and directly observable has also ensured its importance. Sceptical scientists have gone on record as saying that there's nothing about 'Patty' that can't be replicated by a human. Someone walking with slightly bent knees, a bit of a stoop and exaggerated arm-swinging could easily fake it. But what's especially intriguing is that a few other qualified scientists have said exactly the opposite.

The most vocal of the latter was the late Grover Krantz, an anthropologist at Washington State University. Krantz became a prominent supporter of the validity of bigfoot after examining a series of tracks at Bossburg, Washington state, that couldn't, in his view, be fakes; they seem to have been made by an individual with a malformed foot. He devoted considerable energy to the P-G footage, and argued that 'Patty' simply couldn't be a human in a suit, because the girth of the creature well exceeded that of any person. Krantz also argued that the creature's gait is unique and very different from that of humans. The claim has also been made that 'Patty' displays anatomically accurate muscles moving beneath its skin, and that its shiny, realistic pelt can't be replicated by a suit, especially not by the cheap and rather amateurish one available at the time. It's certainly notable that several (often comparatively well-funded) attempts to recreate the footage have failed quite miserably. However, the claim that a man in a suit cannot replicate a muscular action and furry covering that looks like that of a real animal is dubious. Luck is a strange thing and we have to consider the possibility that a hoaxed 'Patty' could indeed meet or exceed expectations if the conditions were just right. Fake suits can, in fact, look surprisingly realistic on occasion.

Krantz combined his view on the P-G footage with data on bigfoot tracks, alleged hairs, ethnic knowledge and other lines to evidence to argue that bigfoot is real, and that its study should be subsumed within primatology, the zoological sub-discipline devoted to the study of primates. He wasn't the only qualified scientist to take this route. Today, Jeff Meldrum of Idaho State University has also made a name for himself as a relevant and qualified expert who supports the validity of the P-G footage and the existence of bigfoot in general. Meldrum publishes regularly on the subject and in 2007 argued that bigfoot tracks can be recognized as a distinct ichnotaxon, dubbed *Anthropoidipes ameriborealis*. An ichnotaxon is not the same as a species name. Instead, it's a label for a unique kind of trace left by a living thing. However, it implies that this trace was left by a species different from those named so far.

The scientific evidence for bigfoot

The role that academics like Krantz and Meldrum play in the study of bigfoot and other 'cryptohominids' is interesting. It would be harsh to say negative things of Meldrum, who is still an active scientist, continuing to publish on mainstream primatology as well as on bigfoot. Krantz, however, who died in 2002, does not emerge as a rigorous, successful or respected scientist. His views on bigfoot failed to win adherents.

Despite Krantz's confidence that he had successfully eastablished that bigfoot was real, there was widespread suspicion among both his academic peers and amateur bigfoot researchers that he'd been duped and had also made many mistakes of judgement and identification. The tracks that so impressed Krantz had been discovered by bigfoot hunters Ivan Marx and Paul Freeman, both of whom are associated with suspected hoaxes. René Dahinden, one of the best known of bigfoot hunters, hated the fact that Krantz relied on evidence coming from these men and publicly berated him for it. It might be assumed that amateurs seeking to see their subject taken seriously would court favour with those academics prepared to study it, but in reality feelings of animosity and different agendas erode and destroy any possibility of co-operation. Krantz noted that when the study of bigfoot is absorbed into formalized science (something he regarded as merely a matter of time) the amateurs that had dominated the subject so far would be made irrelevant. Amateurs resented this approach and regarded Krantz as aloof and aiming to steal their thunder. A thorough analysis of Krantz and his work can be found in Brian Regal's 2013 book *Searching for Sasquatch*.

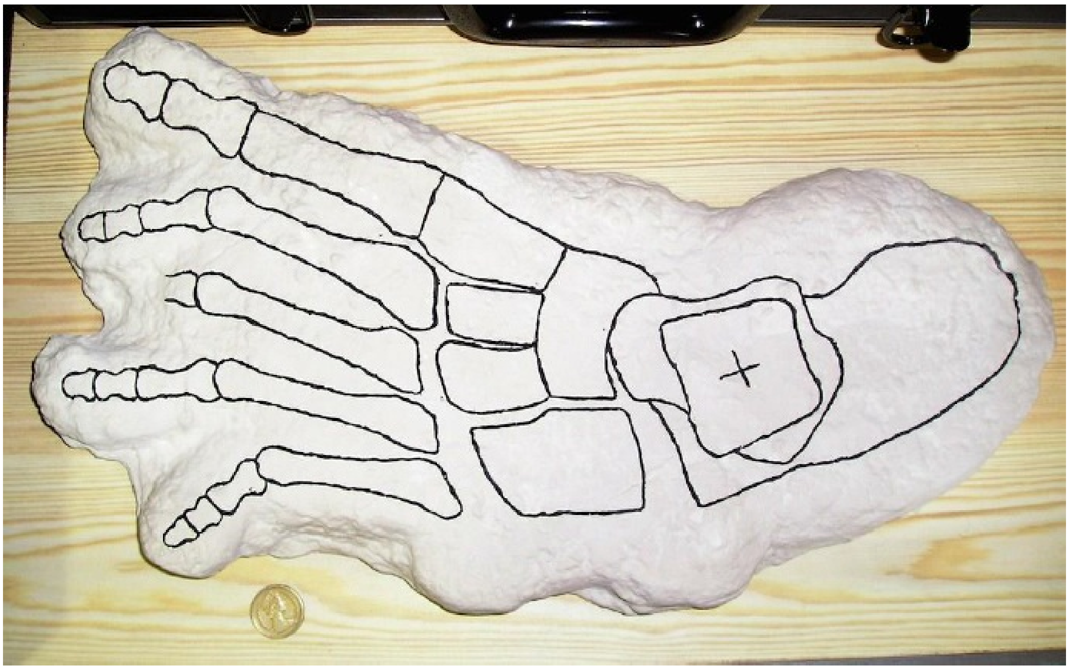
Other pieces of evidence have been deemed compelling or persuasive by Krantz and other bigfoot proponents. Tiny, ridge-like structures on bigfoot footprint casts have been identified by some as dermal ridges – the structures present on primate hands and feet, probably due to an initial role in enhancing grip during climbing. It was argued by bigfoot proponents that these dermal ridges are consistent in size, distribution and anatomical detail, are indisputably similar to those of non-human primates and can only have been made by a real unknown hominid. Krantz also argued that sweat pores and other tiny structures could be seen in bigfoot footprints.

Meldrum has argued that bigfoot prints possess features inconsistent with human anatomy but in keeping with that of non-human primates. He points specifically to a raised diagonal ridge that extends across the middle of some bigfoot tracks, dividing the sole of the foot into two sections. Meldrum's argument is that this represents a flexible zone in the ankle termed the midtarsal break. This is supposedly absent in modern humans but present in other hominids (though read on). Meldrum has also argued that a large resting trace left in mud at Skookum Meadows in southern Washington was most likely formed by a bigfoot as it reclined on its side, leaving an impression of its flank, buttocks and legs.

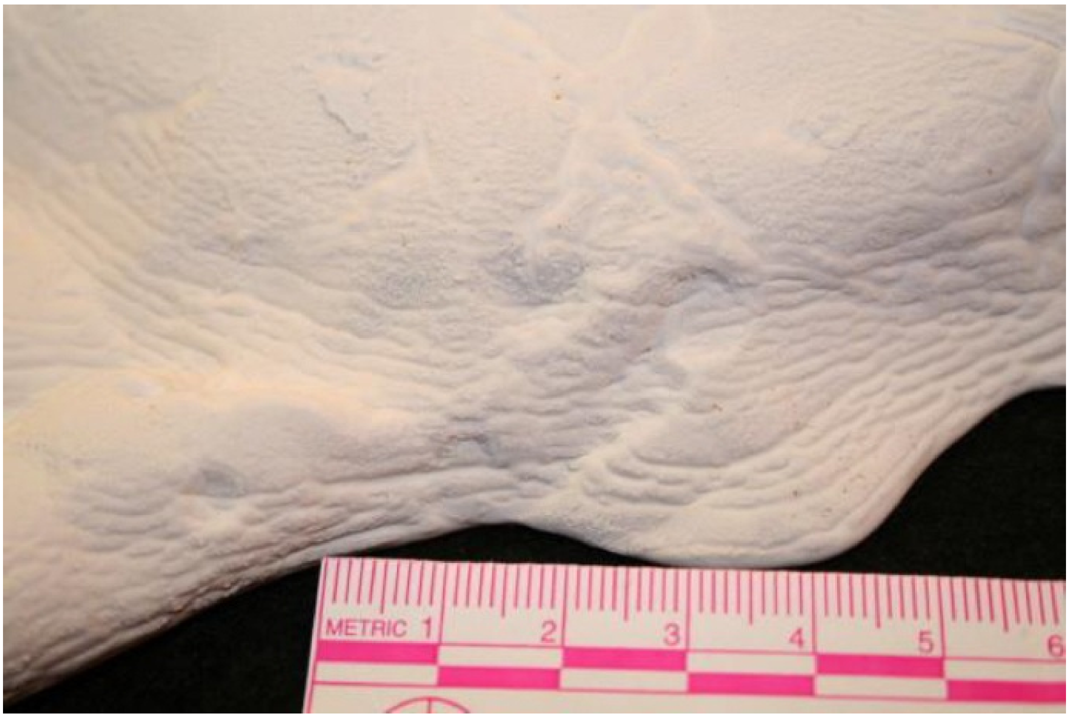
Other evidence put forward to support the existence of bigfoot includes alleged sleeping nests and broken branches. Wood-knocking sounds, loud hoots and whistles, and even speech-like vocalizations have been deemed inexplicable and regarded as noises made by communicating bigfoots. There have also been numerous claims regarding hairs and DNA evidence. In 2013, a team led by veterinarian Melba Ketchum claimed to have documented bigfoot DNA at numerous sites across North America, their results apparently revealing that bigfoot is a hybrid between *Homo sapiens* and a second, unknown animal of uncertain affinities.

Since about 2009, examination by sceptics (and, notably, not cryptozoology proponents) has shown that all of these pieces of alleged evidence are either highly problematic or can be explained as the product of misinterpretation or hoaxing. We’re left with a situation where there’s nothing even close to compelling as goes the evidence for bigfoot. This is even more disturbing given that we’re at a time when interest in the existence of this creature is at an all-time high and in which an entire community of people have developed an elaborate jargon and system of ideas about the creature and its imagined biology and behaviour.

Even the footprint details put forward by Krantz and Meldrum fail under scrutiny. The alleged dermal ridges on footprint casts may look like dermal ridges, but – as demonstrated in a series of experiments by investigator Matt Crowley – they also look like artefacts that result from the way plaster dries. Crowley’s results are absolutely compelling. By making plaster copies of a variety of manufactured prints, he has been able to create casts that have ridges, creases and even scar-like features, all of which are *exact* mimics of the features identified by pro-bigfoot researchers as genuine biological structures on other tracks. His work shows that all the tiny structures seen on bigfoot print casts can be explained as products of the cast-making process.



In 1969, over 1,000 bigfoot tracks appeared in the snowy ground of Bossburg, Washington. They seem to have been made by an animal with a malformed foot. This image shows a cast of one of these prints. Anthropologist Grover Krantz became convinced that the anatomical details of the tracks simply could not have been faked because no one, he claimed, had the required expertise to produce them. In fact, there were good reasons to link them to people with a confirmed record of hoaxing bigfoot evidence.



Several casts of bigfoot tracks reveal ripples and ridges that resemble the dermal ridges present on the hands and feet of primates. For a while, these were mooted as strong evidence supporting bigfoot's existence. Thanks to experiments run by investigator Matthew Crowley, we now know that drying plaster creates identical-looking ridges and furrows. In this photo, taken by Crowley, the ripple-like structures are nothing to do with an animal's foot. Instead, they're simply a consequence of what happens to plaster as it sets and dries.

The bigfoot 'midtarsal break' doesn't especially resemble the structure seen in genuine hominid footprints, being much closer to the middle of the foot than it is in other hominids. It should also be noted that a midtarsal break is not, in any case, absent from modern humans as previously believed. A 2013 study demonstrated its presence in about 8 percent of a studied group of 398 people. All of this may be irrelevant though, since the 'midtarsal break' present in bigfoot footprints looks far more like the bank of sediment pushed up by the human foot on occasion, notably when people wear flat-bottomed objects like fake bigfoot feet.

These observations destroy the idea that certain bigfoot footprint casts can be regarded as compelling evidence for the creature's existence. The problem with bigfoot prints is that fakery is so ubiquitous and so widespread that there's literally not one piece of evidence that can be considered uncontroversial. Krantz claimed that he saw tiny anatomical features on those track casts that he regarded as genuine and which demonstrated the reality of the more compelling examples he studied. But his confidence was misplaced. A 1994 investigation by Michael Dennett showed that the tracks that Krantz regarded as so crucial had, in fact, been hoaxed by an individual who had grown tired of Krantz's bragging and decided to call him out.

The so-called Skookum body cast turned out to be consistent with the resting traces that deer make when reclining in mud. The DNA results reported by Ketchum and colleagues were examined by several geneticists unattached to the project. They found that none of the claims made by the team withstood scrutiny and that the results were best explained as the result of contamination from known species, like opossums. Finally, the nests, broken branches and vocalizations attributed to bigfoot can all be explained in other ways. Animals of many kinds gather foliage, break branches and make weird calls, and wind and water can also explain some of the nests and other field signs attributed to bigfoot. In any case, a great many potential explanations have to be considered before we can accept any of these things as evidence for an undiscovered North American hominid.

For all the lack of convincing evidence *and* the mainstream rejection of the existence of bigfoot, the fact remains that belief in the existence of this creature is more popular than ever. An extraordinary number of stories, anecdotes and sightings are on record. We'll return to these anecdotes later. Before that, let's look at the fact that whole idea of mystery man-like monsters – 'cryptohominids' – is hardly unique to the western parts of the United States.

Bigfoot-type creatures are known to peoples across virtually every single landmass. As we'll see, this fact does not exactly strengthen the idea that there's a biological foundation to any of these alleged creatures. Cryptozoologists who promote the idea that these animals are undiscovered flesh and blood primates have had to come up with all manner of ideas on how these creatures might be explained.

Bigfoot is not alone

Bigfoot is not the only human-like mystery primate said to occur on the North American continent.

Little known outside the cryptozoology fanbase is that North American cryptohominid accounts do not all describe giant, hulking man-like bigfoot creatures. Stories and anecdotes from the south-eastern United States describe creatures more akin to gorillas and chimpanzees, sometimes associated with swamps and thick forests and even said to be capable of swimming. To cryptozoology advocates, these are suggested as representing a distinct type of native hominid that is not closely related to bigfoot. Cryptozoologist Loren Coleman suggested the name 'napes' – a contraction of 'North American apes' – for these creatures during the 1960s. According to this idea, more than one undiscovered North American hominid awaits discovery: a concept known as the multi-species model.

Stories and myths about dark-furred, forest- and swamp-dwelling apes in the southern United States extend back to the early 1900s. One possible explanation sometimes put forward is that these were escaped circus animals, and maybe some of them were.

A more radical idea suggested by Coleman and his colleague Mark Hall – and by Heuvelmans, too – is that napes might be members of a hominid group otherwise known from the fossil record of Europe, Asia and Africa, termed dryopithecines. This group is named for *Dryopithecus*, an extinct ape whose limb proportions suggest that it was an orangutan-like climber, not a more terrestrial ape like a chimp or gorilla. There are no indications whatsoever that either *Dryopithecus* or any of its close relatives survived to geologically recent times or that they ever migrated into the Americas. Like so many ideas in cryptozoology, the concept that a group of long-extinct animals might not only have survived to the present but might also occur in a part of the world where they have no record at all (fossil or modern) is too speculative to be taken seriously. Is there anything beyond anecdote and legend that pertains to these supposed 'napes'?

A photo of a footprint said to be that of a nape, discovered in Illinois in 1962, has been used to support the idea that these creatures are real. The footprint is similar in size to that of a human, and looks superficially like a hominid track with an abducted hallux (that is, one where the big toe projects outwards relative to the rest of the foot). However, because isolated hollows in the ground can often have a track-like appearance, a rule of thumb when attempting to demonstrate the existence of an unusual foot anatomy in a given animal is to record a whole trackway of examples. One in isolation won't do.

The whole concept of the 'nape' is best dismissed as a tall tale that evolved from an early 20th-century craze about exotic tropical animals living wild in the United States, and few of the accounts linked to the phenomenon have an authentic air. One recent event has been seen by believers as strengthening the case for 'nape' reality. It involves two photos of a large, shaggy-furred ape, said to have been taken in Sarasota County, Florida, in 2000. This area includes the Myakka River and Myakka State Park, and the creature depicted in both photos has become known as the Myakka Ape.

These photos were submitted by an anonymous source who sent them to the local Sheriff's Department with a note. The animal in the photos is large, bipedal and has long, straggly reddish or brownish fur and red, glowing eyes. It's partly concealed behind palmetto leaves and looks superficially like an orangutan. It's holding a piece of palmetto leaf in its mouth, its canines visible around the leaf. The implication from cryptozoologists like Coleman is that these are genuine images of a nape. After all, it doesn't look human enough to be a bigfoot. But in reality the Myakka ape photos are almost certainly fake. The 'anonymous photographer' angle is suspicious, and the object (its open-jawed face especially) looks highly similar to certain commercially available ape suits. Putting palmetto leaves in the mouth would be a good way to disguise the manufactured nature of the face.

Another belief widespread in cryptozoological communities is that the bigfoot-type creatures seen along the eastern seaboard of North America are different from those of the west and represent a distinct 'eastern bigfoot' – perhaps a different species or subspecies. Also, remember that this creature is supposed to be different from the 'nape' of the south-east as well as from the 'western bigfoot'. So ... we're now up to three undiscovered North American cryptohominids. It doesn't end there. In books and articles, cryptozoologists Mark Hall, Loren Coleman and Patrick Huyghe have developed a descriptive scheme in which the continent is also inhabited by living Neanderthals, by the gigantic ape *Gigantopithecus*, the australopithecine *Paranthropus* (known as a fossil from Africa) and by a mysterious archaic hominin called *Homo gardarensis*.

These authors have also suggested that large, baboon-like 'giant monkeys' hide in the Americas and account for sightings of long-tailed, leaping 'devil monkeys'. Coleman and Huyghe also proposed the existence of 'merbeings': a class of scientifically unrecognized amphibious and aquatic primates that have been mistakenly described as 'lizardmen', 'mermaids' and chupacabras! They recognized that they 'may be ridiculed' for proposing the existence of aquatic predatory primates, but argued that their idea was based 'on a careful examination of solid evidence of a biological basis'. This last statement is not true, since the 'evidence' these authors considered are recollections and descriptions that come from the human mind, not 'solid' at all, but problematic and open to various interpretations and conclusions.

Whatever the merits (or otherwise) of giant monkeys and merbeings, the 'multi-species idea' endorsed by several cryptozoologists has developed at the same time that scientific knowledge of real hominids has increased exponentially. Since the 1990s, a surge of palaeoanthropological discoveries and changing concepts of how populations should be differentiated and named has led to a rise in the number of recognized extinct hominid species. Within the human lineage alone (the hominid group termed hominins), the list of four or five species recognized during the 1970s has increased to more than 20. Many of the species concerned are not really 'new': they were first named decades ago, then assumed to be part of better known species, but later still resurrected in keeping with revised interpretations and changing ideas. Cryptozoologists have regarded this increasingly complex view as some sort of mainstream vindication of their ideas, even though it very obviously is not. After all, palaeontologists who support this view of hominid diversity argue that the fossil record demonstrates the extinction of virtually all of these species in the deep past.

The multi-species idea also reflects a strange desire among some cryptohominid researchers to see those hominids known from the fossil record as members of the living primate fauna. In 1976, Russian cryptohominid researchers Dmitri Bayanov and Igor Bourtsev noted their hope ‘that all the hominid forms known from the fossil record, and even those not known from it, will turn out to be alive’. This marks a bias in their world-view. They *want* extinct hominids of many sorts to still be alive.

Even within the cryptozoological community, the multi-species idea for cryptohominids is treated differently by different researchers. Krantz was aware that this explanation would make the field a laughing stock. It was (and is) difficult enough for mainstream science to take seriously the idea that one large undiscovered hominid might exist in North America, so the idea that two or more might be present, and that they might belong to diverse hominid lineages, is just too much to swallow. British cryptozoologist Richard Freeman described how Coleman and Huyghe’s ideas about merbeings and giant monkeys are the sort of thing that ‘gives cryptozoology a bad name’. However, the fact remains that the only option available to those who interpret accounts of mysterious creatures as descriptions of real animals is to regard them as representing multiple species. After all, the accounts vary enormously in description. This is one reason why cryptozoological ‘literalism’ – the belief that descriptions must really be based on encounters with real animals – is such a problematic way of interpreting the evidence.

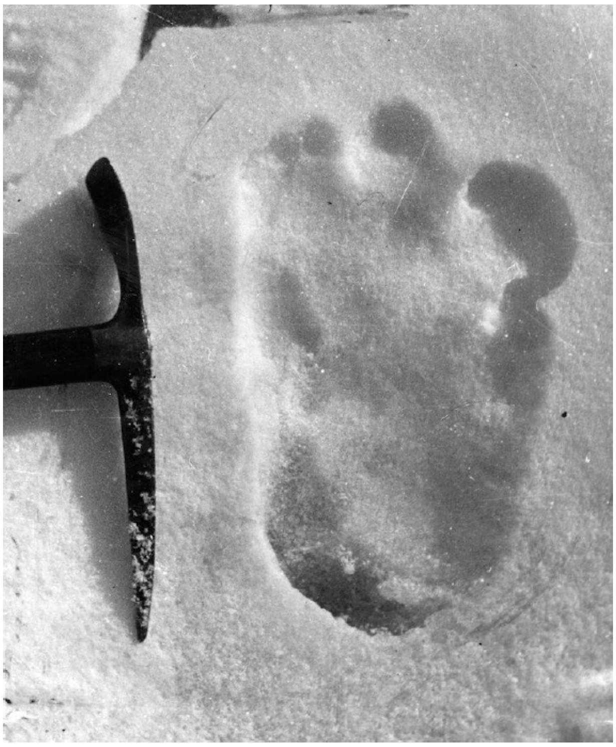
Asian cryptohominids

Just as famous as bigfoot, if not more so, is the yeti or abominable snowman of the Himalayas. The yeti of pop-culture is a snow-white beast of mountainous regions, highly resistant to the cold and with predatory leanings. In the cryptohominid literature, yetis as described by witnesses are virtually never white or pale. Instead, the beast is reddish, brown or black, and associated with rocky, wooded valleys as well as snowy regions. Some debate has also centred around the term ‘yeti’ itself, some saying that this is a collective term for creatures the locals call the dzu-teh (a big, reddish predator – probably a bear) and meh-teh (a smaller, more human-like creature).

Only a handful of accounts unambiguously describe the furry, human-shaped primate we associate with the word ‘yeti’. Furthermore, those accounts are either very vague or of suspect authenticity. One of the best descriptions of the classic, familiar version of the yeti is that reported by Slavomir Rawicz in 1942. He supposedly saw two yetis while travelling across the Himalayas on an escape journey from one of Stalin’s labour camps – a remarkable story of survival that was told in a book, *The Long Walk* (1956), and later made into a movie, *The Way Back* (2010). However, the entire tale has been regarded as a hoax by many, including those mountaineers and explorers who know the Himalayas well. Local lore does not clearly refer to an animal identifiable as a hominid or even a primate, but to a more amorphous creature that is never clearly described. It might be man-like but it’s also attributed features typical of big cats or bears. It has also been argued that the entire yeti myth is based on bears, perhaps on an unusual bear that stands or walks bipedally and has a peculiar call.

If this is the case, where does the idea of hominid-like yeti come from? The concept of a dark-furred monstrous biped of the Himalayan highlands merged with the 20th-century idea that unknown hominids might still stalk the wild places of the world. That view is itself descended from the widespread belief in human-like wild creatures that are like us, yet more attuned to a ‘natural’ life. It somehow became legitimized by the discovery of evolution and fossil hominids. This model was supported during the 1950s by Heuvelmans and Sanderson (among others), both of whom were heavily inspired by the fossil hominids discovered at the time, and were driven by a belief that mythical creatures should be ‘de-mythified’ at every opportunity.

With this idea of the cold-adapted, bipedal cryptohominid fixed in their minds, the investigators who adopted this view could only pick and choose the features mentioned in accounts or myths consistent with this image. Dome-shaped hats created by Tibetan monks were imagined as accurate reconstructions of the high-peaked, crested head of the yeti, and a skeletal primate hand preserved in a monastery at Pangboche in Nepal was thought to provide support for the reality of the ‘hominid yeti’. The hats were actually made of skin from a serow (a member of the goat-antelope group) and the hand (which was handled, modified and even broken by western visitors over the years) was human.



This is one of at least two photographs, taken in 1951 by Eric Shipton and Michael Ward, that famously show a supposed yeti print discovered on Menlung Glacier in the Himalayas. Argument continues over the authenticity of the track, but several details suggest it is not genuine. Furthermore, if it is genuine it seems suspicious that Shipton and Ward only took time to photograph this one track and not any others.

A human-like footprint, photographed on Menlung Glacier in the Himalayas by Eric Shipton and Michael Ward in 1951, has also been used as supporting evidence for the ‘hominid yeti’. Uncertainty surrounds this track; we’re likely to never know the truth behind its origin. The fact remains that it doesn’t look as much like a track as often assumed. Broken, irregular, sharply defined depressions across the floor of the track do not resemble the features that real primate feet make on snow. And its proximity to another ill-defined depression in the snow of similar form (and also possessing irregular depressions on its floor) suggest that it’s a tidied, ‘augmented’ feature that was not made by a real animal’s foot. If this is so, the neat and clear marks that are supposed to be toe impressions may have been added by a human hand or foot. As with the Illinois nape track described earlier, the fact that only a single track was photographed casts immediate suspicion on the idea that this represents part of a sequence.

The yeti is not the only shaggy-furred cryptohominid thought by some to exist in the wild parts of Asia. China is said to be home to the similar yeren, while a large swathe of Asia – from the Caucasus in the west to Mongolia in the east – is associated with the almas, almasty or almasti. The impression given of the almasty in the literature on mystery animals is that it’s more human-like than the yeti and yeren. Several researchers have suggested that it might be a surviving population of Neanderthals – a species of hominid thought from the archaeological record to have died out about 30,000 years ago.

Russian researchers interested in this creature claim that its natural history and biology is almost as well understood as that of accepted non-human hominid species like chimps and gorillas. The level of detail they report is astonishing but difficult to accept as valid given that there are no documentary photos or segments of film. And while alleged hairs and others pieces of evidence said to belong to the yeren and almas have been provided, all have proved to belong to known species. The skulls of two people named Zana and Khwit, both of whom died in Abkhazia near the Black Sea during the 20th century and were posited as almas individuals or almas-human hybrids, are thought today to be fully human, perhaps of recent African ancestry. A few other alleged almas bones have been found in the Caucasus, Mongolia and elsewhere, but all have proved to belong to *Homo sapiens*, and none possessed any of the distinctive features of Neanderthals or other fossil hominids.

The strange case of the Minnesota iceman

Odd bones and hairs are a far cry from the most remarkable alleged piece of cryptohominid data – the complete carcass of a hirsute male hominid, 1.8 m tall, preserved in ice and transported about the United States as part of a travelling exhibition belonging to Frank D. Hansen. At this time – late 1968 – the specimen was known as the ‘Siberskoye Creature’.

The specimen was brought to the attention of Sanderson and Heuvelmans by aspiring naturalist Terry Cullen. Cullen had observed the carcass at the International Livestock Exposition’s annual fair in Chicago. Hansen claimed that he was only the temporary ward of the body and that it belonged to an undisclosed owner (widely rumoured to be actor Jimmy Stewart). At one time Hansen claimed that the body had been discovered floating in a block of ice off the Siberian coast by a Russian seal-hunting vessel. Later, he said that a Japanese whaling ship found the body. Later still, he said that it had been found in a deepfreeze facility in Hong Kong. And later still it was said that the animal had been shot on a hunting trip in the Whiteface Reservoir region of Minnesota. For all these suggestions, the most popular idea about the body's origin is that it was collected in Vietnam and flown to the United States in a body bag. Heuvelmans connected it with the story of a 'huge ape' killed in Danang, Vietnam, in 1966, supposedly close to where Hansen had been stationed during the war.

Sanderson and Heuvelmans examined the iceman in December 1968 at Hansen's home where it was being stored off-show for the winter. Both became convinced of its reality, so much so that they prepared detailed illustrations and planned to have the creature described in the technical literature. The body was that of a robust, barrel-chested male with a thick neck and large hands and feet. Its face was broad, flattened and possessed a short, upturned nose and prominent brow-ridges. An eyeball dangled from one of the sockets, apparently resulting from a gunshot to the back of the head, and a bend in the forearm was interpreted as evidence for a fractured radius and ulna. Sanderson and Heuvelmans were intrigued by its enormous hands. Its thumb was slender, tapered and long, its nails were flat, yellow and of an appearance that almost looked manicured, and a heel-like pad was present on the palm's outer side, a feature suggested by Sanderson to be indicative of habitual quadrupedal behaviour. At one point during the examination, the glass over its case cracked, releasing an odour described as that of decomposing flesh.

This object has been known ever since as the Minnesota iceman. Sanderson and Heuvelmans both spoke about it in the media, Sanderson making the unfortunate decision to refer to it as 'Bozo'. This seems oddly unhelpful given his apparent belief that it was real. Heuvelmans published a 1969 paper on it in a Belgian scientific journal, identifying it as a new species of the human genus that he named *Homo pongoides*, meaning 'ape-like man'. He later modified this proposal, arguing that *H. pongoides* was a form of living Neanderthal. His ideas were explored in detail in his 1974 book *L'Homme de Néanderthal est Toujours Vivant*, co-authored with Russian historian, economist and cryptohominid expert Boris Porchnev.

John Napier, a primatologist at the Smithsonian Institution with a serious interest in cryptohominids, was invited to examine the iceman. He became sure that it was a latex model. Hansen's dodge for this was that he had withdrawn the original, genuine specimen from display (mostly from fear of being found guilty of killing what might have been a form of human) and replaced it with a model. Sanderson supported this by saying that the specimen examined by Napier was obviously different from the original one he and Heuvelmans had examined. Photos show that, over the years, the form of the face and body varied somewhat. In some photos, the mouth is closed, and in others it's open, clearly revealing a complement of large teeth. Maybe there was more than one model, and some of the models looked more realistic than others, but it also seems possible that as the model used by Hansen was defrosted and frozen again for each annual outing, it would have taken on a slightly different pose and appearance each time.

The sceptical view of the Minnesota iceman has always been that it was a hoax – the latest in a long tradition of displaying enigmatic, memorable sideshow exhibits that are implied to be real. In 2013, what appears to be the original and genuine article was offered for sale online. Today, the Minnesota iceman is owned by Steve Busti of the Museum of the Weird in Austin, Texas, and certainly looks identical to the specimen discussed and illustrated by Heuvelmans and Sanderson. Its hoaxed nature doesn't exactly leave Heuvelmans or Sanderson looking all that credible as scientists.

What makes the Minnesota iceman case especially interesting within the context of cryptozoology as a whole is how it was interpreted by supporters of its reality. Thanks to Heuvelmans' influence, the concept of a dark-furred, Asian cryptohominid with an upturned nose, distinctive facial, hand and foot anatomy, and a barrel-shaped chest has caught on. Cryptohominid researcher Helmut Loofs-Wissowa argued in 1994 that images from ancient art were consistent with this description, and hence that knowledge of *Homo pongoides* has been influential throughout human history.

Of course, wherever we search in the world there are legends, stories and – often – claimed sightings of wild, hairy people, so it isn't surprising that various semi-legendary Asian creatures were linked to this concept and suggested as possible representatives of the same sort of animal. A large number of wildman reports collected from the Caucasus in the west to Mongolia in the east by cryptohominid researchers Boris Porchnev, Dmitri Bayanov and Marie-Jeanne Koffman have been said to be uncannily similar to *Homo pongoides* in anatomy and therefore interpreted as sightings of the exact same species. In addition, more than 20 reports collected in northern Pakistan by the late herpetologist Jordi Magraner and pertaining to a wildman known as the bar-manu have also been regarded as descriptions of *Homo pongoides*, the witnesses again reporting a long list of features regarded as consistent with this creature's appearance.

Magraner's investigation and analysis has been regarded as a great triumph of the cryptozoological method, and as a demonstration of the fact that *Homo pongoides* and the Minnesota iceman are valid biological entities. Similarly, Loofs-Wissowa's ideas about hominids of this sort being depicted in art have also been regarded as providing support for the existence of this creature. But the iceman was a model, and thus the species and the traits associated with it evaporate as anything meaningful in biological terms. Where does this leave all those reports that 'match' it in description?

We have to conclude that everything written about *pongoides*-like hominids encountered in ancient art and real life is erroneous – that people were picking and choosing those features that matched the *pongoides* concept, and being led astray by a mistaken assumption that it was a real animal. In fact, the reason the Minnesota iceman was regarded as so convincing in the first place is that various of its features matched the archetypal concept of 'the wildman'. People like Sanderson and Heuvelmans *expected* to see the features they did because they were preceded in centuries-old imagery of semi-mythical wild people.

Cryptohominids far and wide

So far, all the alleged mystery hominids we've seen are associated with northern places. However, what makes the mystery hominid phenomenon especially interesting is that tales of such creatures are not restricted to those places. Creatures very similar, if not identical, to bigfoot and the yeti have been reported across Africa, South America, Australia and even from such farflung places as New Zealand and Hawaii. Since about 1993, reports of bigfoot-like monsters have even come from Spain, eastern Europe, Scotland and northern England.

These European accounts might be especially important to the cryptohominid phenomenon as a whole. It *might* be plausible that a large, undiscovered mammal could persist in the wild regions of North America or Mongolia, but countries like England are so well explored, and have so little space for wild animals, that the idea really can be dismissed out of hand. Yet European 'bigfoot reports' are not essentially different from those of North America and elsewhere. This supports the view that cryptohominids are the manifestation of a human-wide cultural concept, not a zoological reality. That is, the idea of hairy 'wild people' is ubiquitous and forever resident in our psyche. It also supports the impression that reports of such creatures often come from people with a case of 'bigfoot on the brain': people who interpret all manner of woodland sights, sounds and signs as possible evidence for a cryptohominid.

Australia is linked to sightings of the yowie, more than 300 sightings of which have been reported, the oldest of which date to the 1820s. Yowie accounts mostly describe bigfoot-type creatures, though some refer to the creature as a sort of 'Australian gorilla'. Reported sightings of gorilla- or bigfoot-type creatures have trickled in across the decades but the phenomenon as a whole was mostly unknown until the 1970s. This is the time when author and researcher Rex Gilroy began to write widely about the creature in newspapers and magazines.

A few yowie sightings sound realistic enough to suggest that people might really have seen large, unidentified mammals of some sort. But there's no useful evidence – no photos, films or physical data – to support them. Actually, there *are* bits of footage but they're almost certainly hoaxed. The best-known piece of yowie footage is the so-called Piper footage, taken in New South Wales in 2000. It shows what looks like a man in a gorilla suit, filmed from behind vegetation and with little detail visible.

A tiny number of yowie tracks have been photographed or cast. What may not be clear to even dedicated investigators of mystery animals is that the objects concerned don't look like real animal tracks at all. Books and articles on the yowie frequently feature photos of enthusiastic investigator Gilroy posing with footprint casts, proudly displayed as if they demonstrate the authenticity of the phenomenon. The casts just don't look like authentic casts of footprints to anyone who knows what to look for. They look like casts of shapes manufactured by human hands.

The idea that Australia might be home to a native primate is difficult to accept based on our understanding of primate evolution and history. Australasia has been isolated for more than 70 million years, meaning that there's little chance of primates colonizing the region naturally. In fact, prior to the invasion of the region by humans and other placental mammals via boat, only rodents managed to arrive there naturally. For this reason, researchers have suggested a number of peculiar ideas to explain the yowie phenomenon. One is that these creatures are members of our own species, but represent individuals (either indigenous Australians or Europeans) who have taken to solitary life, and have become unusually hirsute and unkempt. Another is that the yowie might not be based on sightings of primates at all, but on a primate-like marsupial, perhaps the fossil wombat relative *Hulitherium*.

Both of these ideas have problems. A problem with the 'dishevelled human' hypothesis is that humans found living wild in the Australian bush have been instantly recognized by other humans as members of their own species. The 'marsupial hypothesis' is also problematical: even *Hulitherium* is not primate-like at all (it would have looked more like a giant wombat), and no yowie witness has ever described a creature that might reasonably be interpreted as anything other than a hulking, hairy, bigfoot- or yeti-like monster.

In view of the paucity of actual evidence, a vague, unsatisfactory and inconsistent body of eyewitness reports, and an inherent biological implausibility, the yowie has to be considered a folkloric phenomenon, not a biological one. What started as a series of tall tales about giants or gorilla-like monsters became mixed with mystery-mongering and the appealing idea that the vast Australian outback might be home to a creature similar to North America's bigfoot.

A vast pool of behavioural anecdotes

An enormous number of often very detailed behavioural traits have been attributed to bigfoot, almas and other cryptohominids. They range from the sublime and reasonable to the preposterous, and there are so many that entire chapters of books are devoted to them.

Bigfoots have been reported running, sometimes at great speed. Bigfoots have also been reported wading and swimming, sometimes even using breaststroke- or frogkick-like moves while submerged.

They've been seen climbing trees, though bigfoot researchers argue that such accounts describe the activity of young individuals. Bigfoots are reportedly attracted to buildings and vehicles and some accounts refer to them slapping or thumping on walls, doors or roofs in aggressive fashion. Another perceived act of aggression is stone-, rock-, or wood-throwing.

Feeding and foraging behaviour has been described many times. Bigfoots have been seen eating, carrying or foraging for berries, leaves, apples, turnips, clams, bacon, eggs and flour. People who claim that bigfoots visit their backyards say that they are partial to watermelons and candy bars. The idea that bigfoots and other cryptohominids are placid, gorilla-like herbivores has been popular in some circles. This is the view of bigfoot familiar to many due to the 1987 movie *Harry and the Hendersons*. But it's inconsistent with stories that describe bigfoots grabbing and killing other animals, ranging from bears and deer to sheep, cattle and pet rabbits and cats. In one of the most memorable cases, biologist John Bindernagel described how a human watched a deer emerge from a wooded area and then stand motionless, offering no resistance, as a bigfoot picked it up by the antlers, bit it on the neck, and carried it off. These claimed observations mean that some researchers regard bigfoot as omnivorous and predatory. Incidentally, when pondering this case, Meldrum went so far as suggesting that bigfoot may be able to temporarily paralyse prey animals via the use of infrasound – a suggestion inspired by a similar paralysing use of infrasound supposed to be used by tigers.

Bigfoots have also been reported twisting and breaking branches. Piles of vegetation have been interpreted as nests, beds and daytime refuges. Bigfoots reportedly seen foraging in rock piles for sleeping rodents were said to neatly stack the rocks they removed, and there are claims of them braiding the manes of horses.

Then there are the vocalizations. A variety of howls, wails, shrieks, screams and growls have been attributed to these creatures. Most remarkable are the complex, speech-like utterances dubbed 'Samurai chatter' and interpreted by some researchers and aficionados as evidence for true speech in these animals, or as proof of adept mimicry. Modern bigfoot mythology also has it that the animals communicate by making loud wood knocks, thought to be made by the creatures as they strike trees or branches with rocks or chunks of wood.

What are we to make of this vast pool of anecdotes? Some of these accounts are hard to believe and sound more like the kind of supernatural features expected from mythical creatures like trolls or fairies. Others are more believable in view of what we know about real hominids and other primates, but are still remarkable for creatures that have managed to completely evade scientific detection. If cryptohominid reports really do represent a combination of observational mistakes (encounters with bears, deer and even humans) with a cultural interpretation of the natural world, it seems logical that the things done by real animals – the collecting of berries, eating of carrion, building of nests and so on – will be built into stories and anecdotes both because they add complexity and reality to these accounts, and because they represent misinterpreted or misidentified sightings of real animals in the first place.

Indeed, it's not difficult to find plausible alternative explanations for some of these 'behaviours'. Wood knocks occur in forests everywhere as branches bang together when trees sway in the wind, or result from falling debris. Twisted branches can be the result of strong winds, and masses of vegetation interpreted as nests can be formed as lightweight accumulations of bark, leaves and twigs are massed together by wind or water. At least some instances of 'thrown' stones and rocks likely result from such objects gathering speed and bouncing for a distance after falling from a cliff-face or steep slope. And human pranksters are everywhere.

Putting cryptohominids in the primate family tree

Views on what these creatures might be have varied somewhat in the community of researchers that try to interpret them. One idea that's been popular in some circles is that bigfoot, the yeti and so on are hominids, and close relatives or descendants of *Gigantopithecus*, a giant, extinct hominid known from the fossil record of eastern and southern Asia.

It has often been suggested that the yeti and perhaps bigfoot represent surviving populations of *Gigantopithecus*, a giant relative of orangutans that inhabited Asia during prehistoric times. However, this view is not promoted by all researchers. In recent years, the idea that bigfoot in particular might be a variant of *Homo sapiens* has become increasingly popular.

We know frustratingly little about *Gigantopithecus* other than that it was very large, since all we know of it consists of jawbones and teeth. Its jaws show that it had the sort of face seen in its closest relatives (the orangutans): an ape-like face with projecting jaws, not a human-like one with short jaws that are essentially flush with the face. Most experts on fossil primates regard *Gigantopithecus* as a member of the same lineage as orangutans, a group called the pongines. For this reason, it should be assumed that *Gigantopithecus* was proportioned more like orangutans than humans. It was perhaps capable of bipedal walking, but it likely had proportionally long arms and short legs compared to humans, and was a fist-walker that used its hands for support. If we imagine the creature just described, it is emphatically not a good match for bigfoot, yeti or indeed any of the cryptohominids as described by eyewitnesses, since all are described as being far more human-like in limb proportions and facial anatomy.

Despite this, the *Gigantopithecus* hypothesis has been taken quite seriously by several researchers. It became well known thanks to Heuvelmans' books and was later promoted more forcefully by Grover Krantz. Motivated entirely by his interest in bigfoot, Krantz argued that *Gigantopithecus* was not orangutan-like, but was a biped proportioned more like humans; he actually, controversially, regarded it as more closely related to humans than to orangutans. By starting with the most complete of the fossil jaws, Krantz extrapolated the shape of the entire skull and noted that the shape of the mandible was consistent with an upright bipedal pose. It's not clear that this is true – the overall shape of the *Gigantopithecus* mandible is not obviously different from that of hominids that are not regularly bipedal. Anyway, Krantz was confident enough about this identification that he felt justified in proposing the new scientific name *Gigantopithecus canadensis* for bigfoot.

Ignoring Krantz's idea that *Gigantopithecus* might be closer to humans than orangutans, the idea of a bigfoot or yeti that's interpreted as a member of the orangutan lineage would be radical in terms of what it would mean for hominid evolution. Why? The presence of human-like foot anatomy and human-like proportions in a member of the pongine lineage would suggest that pongines independently evolved a species that closely resembles humans. This is a radical proposal based on what we currently understand about hominid evolutionary history. It would mean that human adaptations are not unique, as presently thought. Furthermore, it would mean that the evolutionary pressures that led to the evolution of humans had acted on the members of other hominid lineages, thereby meaning that our current ideas about how, why and where those features evolved would be in need of a total rethink (the features concerned are those thought associated with dedicated terrestrial walking in open environments, of long-distance foraging in grasslands and other open habitats, and of a move away from a climbing lifestyle).

Alternatively, the presence of human-like foot anatomy and proportions in a pongine could mean that these features were present in the hominid ancestral to both the pongine and human lineages, which if true would mean that many of the features associated with humans had actually evolved much earlier in earlier hominids. Not only would this model mean that humans are not particularly 'special' in terms of adaptations and anatomy, it would also mean that pongines (like orangutans) and non-human hominines (like chimps) had evolved their climbing features independently *and* secondarily from human-shaped ancestors. Other, more complex evolutionary scenarios than the two outlines here are conceivable. The main point is that a human-like pongine would be a radical discovery – not an impossibly radical one that we can't account for, but certainly one that would be extremely significant as goes what we think we understand.

The idea that cryptids might have the power radically to change current models of evolution is a very common one within the field. Not only, some cryptozoologists say, might cryptids reveal vast gulfs in our knowledge of extant animal diversity, their discovery might also mean that we need completely to revise our understanding of animal evolution and how we interpret the fossil record.

There are other ideas about the identity of cryptohominids that are arguably less radical than the pongine hypothesis. One is that some of these creatures might be australopithecines, the otherwise uniquely African hominine group that almost certainly includes the ancestry of our own lineage. Australopithecines include species that are small compared to modern humans and may have looked generally chimpanzee-like: *Australopithecus afarensis*, the species that includes the famous specimen Lucy, is a good example. But there are also more powerfully built, larger species – the robust australopithecines or paranthropines – that were sometimes not that different from our species in size. A superficial similarity between the reconstructed appearance of these animals and cryptohominids like bigfoot means that some researchers have suggested that paranthropines migrated out of Africa to give rise to Eurasian and American populations that persist today. This view has been contested by those cryptohominid researchers who identify the creatures as beings of very different identity, and several discussions of the 1970s centred around the 'paranthropine debate'.

As already mentioned in this chapter, an idea popular in some research groups – especially in Russian ones – is that some cryptohominids are late-surviving Neanderthals. Neanderthals are the quintessential 'cave people' of ancient Europe, though today we know that they also inhabited Asia and contributed to the European gene pool of *Homo sapiens*.

The cryptozoological idea of Neanderthal survival is inconsistent with palaeontological data, but it's also problematic in that the cryptohominids of the mystery animal literature are not at all like the Neanderthals we know from fossils. Neanderthals were almost certainly not hairy-coated creatures like *Homo pongoides* or the almas, but broadly similar to our own species in appearance, abilities and culture. Cryptozoologists have accounted for this by proposing that certain hominids underwent an evolutionary process of 'de-hominization' in which they 'reverted' to a form and lifestyle more typical of non-human primates. Such a transformation is perhaps theoretically plausible, but it complicates things by proposing that we can only explain these mystery primates by invoking a whole new chapter in hominid evolutionary history – one that's entirely speculative and lacks supporting evidence. It's notably similar to many other cryptozoological ideas about the survival of species known from prehistory. Like Heuvelmans' ideas on sea monsters, it involves a speculative evolutionary model that allows the animal lineages concerned to end up with a life appearance utterly different from the one recorded in the fossil record. In short, it involves an unacceptable amount of free-wheeling speculation.

Of the several problems with efforts to identify cryptohominids as the members of specific lineages known from the fossil record, the one discussed most infrequently is that they simply cannot and do not succeed as a good explanation for the bulk of the reports. There might be some accounts that do indeed describe pongine-like or hominine-like animals, but what of the reports of cryptohominids seen wearing clothing, with long tails, three-toed feet, or those that are simply vague and generic accounts of large, hair-covered bipedal monsters? It is dishonest and inaccurate to say that these accounts describe features that we can (or should) relate to particular species or groups.

While dedicated cryptozoologists sometimes lament the fact that mainstream scientists refuse to check or pay attention to cryptohominid data, the field's history shows this to be completely untrue. Qualified anthropologists and primatologists were extremely interested in the various yeti hunts that occurred during the 1950s, and there was serious mainstream excitement about the Minnesota iceman before it became obvious that it was a hoax. The fact is that good evidence that might back up the claimed existence of any cryptohominid remains unknown. DNA, hair and faeces put forward as evidence for the existence of these creatures has failed to pass the tests it should, and tracks, nests and vocalizations remain ambiguous and tainted by the enduring possibility of human trickery.

The entire phenomenon seems to be part of a human-wide idea that we live alongside near-humans or sub-humans – animals that are like us overall, but somehow bridge the gap between humanity and the rest of nature. The fact that all human cultures have a 'need' for near-human monsters of this sort probably explains why creatures interpreted as undiscovered hair-covered hominids are so ubiquitous. In other words, the idea of the near-human monster is always there in the human psyche, and it has never gone away.

Chapter 5 - Mokele-Mbembe, the Ropen and Other 'Prehistoric Survivors'

The cool regions of the northern continents do not by any means have a monopoly on the creatures that cryptozoologists regard as key search targets. Tropical western and central Africa is, if cryptozoological accounts are to be believed, positively swarming with a spectacular but wholly cryptic assemblage of giant, forest-dwelling reptiles and other animals, all of which belong to groups otherwise thought to have died out many millions of years ago. A decidedly odd thing about them is that they don't much resemble prehistoric animals as we currently understand them. Instead, they most resemble the depictions of prehistoric animals that were fashionable in popular books of the 19th and early and mid 20th century. This is a non-trivial observation and we'll return to it later.

The popular view of the Congolese mokele-mbembe is that it is a long-necked, amphibious animal much resembling the sauropod dinosaurs of the Mesozoic Period. Despite popular cryptozoological lore, endemic legends or accounts of such creatures do not really exist. The entire concept of the 'surviving African sauropod' is a myth that arose from 20th-century interest in dinosaurs in Europe and North America and from stereotypes about Africa's history, landscape and wildlife.

By far the best known of these alleged mystery beasts is the mokele-mbembe of the Congo, an elephant-sized water creature said to be a long-necked, long-tailed, herbivorous animal that lurks in deep forested swamps and forest-fringed lakes. It sounds very much like the traditional, 19th- or 20th-century concept of sauropod dinosaurs, and the notion that this is what it is has been endorsed and discussed in many cryptozoological books and articles.

The idea that the Likouala region of the Republic of the Congo might be home to such a beast has been a popular, persistent one ever since the early 1900s. The great animal dealer and showman Carl Hagenbeck was among the first to promote the concept of living dinosaur-like reptiles in Africa, and his claim (made in his 1909 book *Beasts and Men*) immediately attracted global interest. It became a mainstream idea, publicized and promoted by Bernard Heuvelmans and his followers from the 1950s onwards. Heuvelmans wrote a book on these creatures, published in French in 1978 as *Les Derniers Dragons d'Afrique* – and as yet not translated into English. Roy Mackal also wrote about them and his 1987 volume *A Living Dinosaur? In Search of Mokele-Mbembe* (which has a foreword by Heuvelmans) is a cryptozoological classic.

The cryptozoological perspective mostly holds that Hagenbeck's stories originated in genuine eyewitness encounters with unknown animals. However, there's an alternative cultural and sociological perspective. Hagenbeck was almost certainly taking advantage of an early 20th-century dinosaur craze that was sweeping the globe at the time. Thanks to palaeontological discoveries made in the western interior of the United States during the late 1800s, the museums of the day were racing to obtain and install complete skeletons of *Diplodocus*, *Brontosaurus*, *Apatosaurus* and their relatives. Huge fanfare and public interest surrounded the display of these dinosaurs, the very first of which were mounted in New York and London in 1905. Interest in fossil sauropods fuelled interest and excitement in living ones – hardly the first time that such a pattern of association had occurred (remember the similar link between the discovery of fossil plesiosaurs and long-necked sea monsters?) and hardly the last, either. It should be added that African legends and stories about giant monsters of course existed long before this time. However, none of the stories describe animals that sound much like sauropods.

What many proponents of the 'living sauropod' idea seem to have missed is that the half-rumoured notion of surviving African sauropods originally had nothing to do with the Congo region, but concerned Rhodesia – today known as Zimbabwe. Zambia, also in the far south of the continent, was said to be home to sauropod-like beasts during the early 1900s, as was the edge of the Sahara Desert and South Africa.

In effect, people latched on to the idea that any wild region in Africa might be home to living relatives of *Brontosaurus* or *Diplodocus*. Sauropod-like monsters were not special denizens of the Congo region alone, but examples of a sort of lazy, naive view common in Europe and North America whereby all of Africa was imagined as a homogenous dark continent stuck in the Stone Age, inhabited wholly by spear-wielding jungle-dwellers, and little had changed since the Mesozoic Era. Indeed, an oft-repeated phrase made in connection with the idea of surviving sauropods is that 'Africa has scarcely changed since the time of the dinosaurs'. Even the most cursory examination of Africa's fossil, geological or tectonic history will show that this is completely incorrect. Dynamic phases of mountain-building, continental rifting and desertification have had huge impacts on African animal life, and numerous places in the continent have acted as so-called 'species pumps' – areas in which high numbers of new species have evolved and from which they have dispersed. Such successful mammal lineages as elephants, humans, porcupine- and cavy-like rodents and spiral-horned antelopes originated in Africa, often spreading out from the continent to colonize regions elsewhere. Even the great rainforests of central and western Africa have fluctuated massively in size and position, so much so that they were largely replaced by savannah during the last ice age. All of this makes a mockery of the idea – popular in the cryptozoological literature – that Africa has been a static, stable refugium for many millions of years.

In short, the concept of the mokele-mbembe as a living sauropod seems to have originated as a consequence of a 'dinomania' craze sweeping the world during the early 1900s, and of crass, erroneous stereotyping of African biological history – a view of Africa as somehow more 'prehistoric' than the rest of the world.

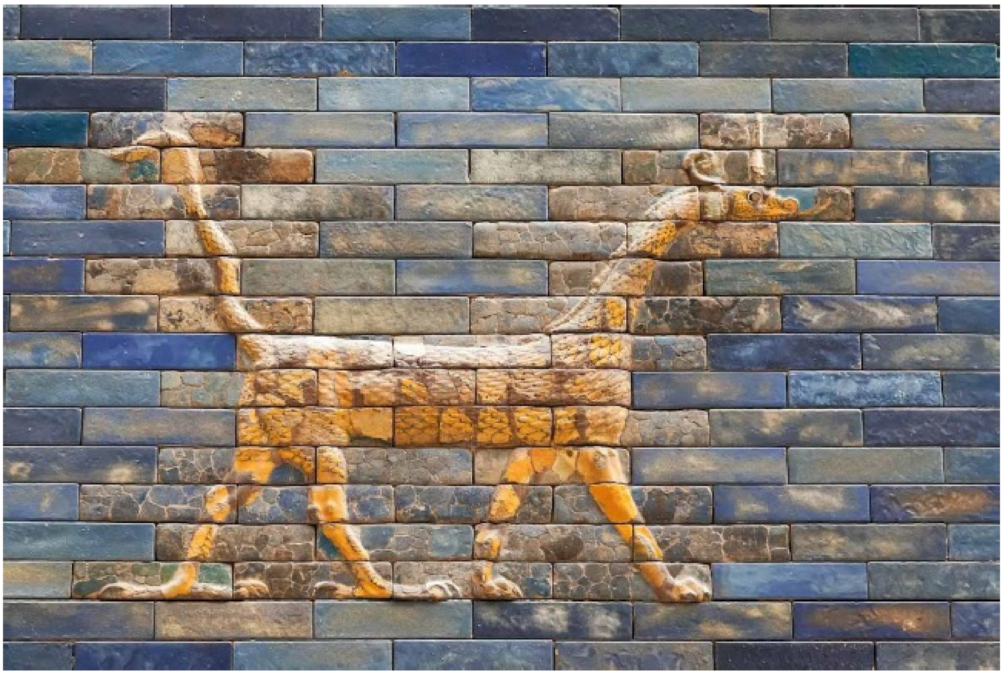
Creationism, anecdote and evidence

With this in mind, it's telling that belief in the mokele-mbembe and various of the other African mystery beasts discussed in this chapter is especially prominent among creationists. Several books that describe 'dinosaur hunts' or quests for 'living pterosaurs' are written by creationists, including William Gibbons, Kent Hovind and Jonathan Whitcomb. Creationists interested in cryptozoology are seemingly motivated by the idea that the discovery of a living sauropod or pterosaur would discredit or destroy evolutionary theory, or justify their belief in a universe just a few thousand years old. Of course, a sauropod or pterosaur that had survived to the present day would demonstrate nothing of the sort. It would just be a member of a lineage that had survived for longer than we had previously thought. Nor would it have any bearing on our ideas about the age of the Earth.

While some mystery animal researchers are comfortable with the idea that creationists aim to contribute to cryptozoology, it's important to note that creationism is not consistent with the field, since cryptozoology strives to operate within scientific principles and be partner to mainstream zoology. Indeed, creationists often express their desire to erode and destroy the scientific community and the way science operates as a process, their aim being to move us into an era in which unquestioned faith in a deity is paramount and ideas about deep geological time and evolution are rejected and abandoned in favour of religious dogma. In other words, it should be clear to anyone who cares about science and a scientific view of the world – the view in which advances in medicine, technology, biology, ecology and so on are integral to our way of life and interaction with our biosphere – that the creationist agenda is biased and dangerous. These people are not our friends, and they seek to usurp us.

Several attempts to find age-old knowledge of the mokele-mbembe have been made. All fail to be convincing because they point merely to vaguely defined, dragon-like monsters of a sort that have no special connection to the modern view of the mokele-mbembe, and might just as well pertain to monster stories common to people worldwide. Mackal pointed to rock art from Tanzania and Zambia as providing evidence for ancient knowledge of a long-necked monster implied to be the same as the mokele-mbembe. The images concerned very obviously depict giraffes.

Better known is the dragon-like animal depicted on the Ishtar Gate, a Babylonian structure constructed in 575 BCE by order of Nebuchadnezzar II. These dragons – known properly as the mushrush – were implied by Willy Ley, Heuvelmans and Mackal to be ancient depictions of the mokele-mbembe, despite the fact that they were created in what is now Iraq and are shown alongside familiar beasts of the Iraq region, like lions and bulls. Furthermore, despite the efforts of some writers to match the Babylonian mushrush with the mokele-mbembe, it's nothing of the sort. Mokele-mbembe is said to be elephant-like with a long, slender neck, and to be sauropod-like overall. The mushrush is shown with a skinny, cat-like tail that extends nearly vertically, it has some kind of curling head frill, a forked tongue, large, bird-like hindfeet, cat-like forelimbs and a covering of prominent, diamond-shaped scales. It is, in short, nothing like a mokele-mbembe at all and should be regarded as an irrelevance to the story.



Several writers have argued or implied that the dragon-like mushrush depicted on the Ishtar Gate in Babylon might be ancient renditions of mokele-mbembe, the supposed 'living sauropod' of the Congo. Any close look at these mushrush images shows what a poor idea this is. Apart from being a four-legged vertebrate, it does not resemble a sauropod in the least.

For all the expeditions and quests that have sought to find mokele-mbembe, what evidence might there be for this creature's existence? So far, nothing has been presented that looks remotely interesting, let alone compelling. An alleged track that features in several books on the subject is, yet again, a single cavity in the ground that doesn't look especially track-like, nor has been shown to be part of a trackway. A segment of video footage, taken at Lake Tele in 1992 and implied to show a swimming mokele-mbembe, actually shows a boat holding two people, one standing while punting the vessel along, and one sitting.

The fact that this unconfirmed creature is linked by local people with known plant species (members of the *Landolphia* dogbane group) has been regarded as providing important tacit support for the creature's existence, as if it provides a valuable data nugget that proves the creature's reality. This is naive given that creatures of undoubted myth and legend are frequently linked with real-world objects. In western Europe, for example, dancing fairies were said to provide the explanation for the appearance of fairy rings. The fact that these rings are formed of fungi that can be identified as to their species does not make fairies real.

Of the eyewitness encounters describing this creature, virtually all are distant tales in which the informant described how the animal was seen by others, or by people of a previous generation. A few eyewitness accounts from the 1990s describe encounters with a long-necked water beast. However, the pro-mokele-mbembe literature makes it clear that giant snakes and enormous softshell turtles also occur in the same region at the mokele-mbembe. Are we sure that these witnesses didn't catch fleeting glimpses of those animals instead? The principle of parsimony – the idea that simple explanations should be chosen over more complex ones – is, after all, preferred in science.

Ivan Sanderson claimed to have seen a mokele-mbembe during a 1932 expedition to Cameroon. An object that resembled the back of a hippo was seen to break to water's surface, 'vast hippo-like tracks' were witnessed and large fruit with tooth marks presumed to have been made by a mokele-mbembe were found. Sanderson is quoted as saying that these hippo-like tracks could be identified as those of a sauropod, yet he seemed unaware of the fact that sauropod tracks as we know them from the fossil record don't look at all like those of hippos. Hippo fore- and hindfoot tracks are four-toed, with distinct, plump digits on all feet. In contrast, sauropod forefoot tracks are unique, crescent-shaped structures lacking toe-marks while their hindfoot tracks are rounded or oval with three or four outward-pointing claws.

A modern detail of mokele-mbembe lore explains how the creatures make deep burrows and caves in riverbanks and take shelter within them, perhaps remaining deep in these excavations for months at a time. The concept of an elephant-like beast forming a tunnel and cave-like chamber beneath the ground has to be considered highly unlikely, but it's not completely impossible – pygmy hippos are known to create large excavations in steep riverbanks, and the famous salt-mining elephants of Kenya's Mount Elgon travel deep underground in tunnels and caves that they partially excavate themselves.

More important, however, is the evidential basis for the claim that the mokele-mbembe digs and hides in tunnels and underground chambers – where on earth does this idea come from? We don't know, but what we can say is that the lore surrounding the mokele-mbembe is now very similar to that associated with bigfoot and certain of the other mystery beasts discussed in this book. People have devised an animal that they think exists, have invented a hypothetical evolutionary scenario that seeks to ‘explain’ it and have also attributed specific behavioural and ecological details to it.

In short, they have indulged in speculative ‘creature building’ of a sort ubiquitous in the cryptozoological literature. Not only is there no reason to think that mokele-mbembe might be real, there is every reason to think that it is a cultural archetype – a relic both of early 20th-century ideas about sauropods and of Eurocentric ideas about Africa and its biology.

More and more ‘living dinosaurs’

The concept of a modern-day sauropod is radical, but even more radical is the idea that modern-day tropical Africa might be home to an entire suite of Mesozoic-style dinosaurs and other giant reptiles, all living alongside one another as well as sharing the habitat with hippos, elephants, forest buffalo and other large mammals.

Supposedly inhabiting the same region as the mokele-mbembe is a second giant creature, the emela-ntouka or emia-ntouka. It is large, grey or brown, quadrupedal and equipped with a large horn. Its hide is hairless and it has a robust tail that reaches the ground. It’s aggressive, semi-aquatic, herbivorous and said to kill elephants and buffaloes with its horn. Indeed, it is sometimes referred to as the ‘killer of elephants’. Stories about this creature were collected in 1913 by the famous German animal collector and film-maker Hans Schomburgk, and additional reported were collected by Lucien Blancou during the 1950s.

In addition to the mokele-mbembe, the Congolese swamps are said to be home to the emela-ntouka, a gigantic horned beast often likened to a horned ceratopsian dinosaur. The idea that the emela-ntouka is different from the mokele-mbembe is doubtful, since accounts supposed to describe these animals merge them together.

Mackal’s book includes a reconstruction of the emela-ntouka and it basically looks like a ceratopsian dinosaur, but without the bony frill so characteristic of this group (ceratopsians are the group that includes *Triceratops* and kin). Unsurprisingly, Mackal suggested that this is what it might really be – a member of a ceratopsian lineage that survived the end-Cretaceous extinction event and persisted to the present. It’s thanks to these musings that the emela-ntouka is nowadays regarded as a wholly distinct beast relative to the mokele-mbembe. Both are clearly demarcated, tidily categorized cryptids.

But if we look in detail at the accounts, any such distinction breaks down. Emela-ntouka and mokele-mbembe overlap in body size (the emela-ntouka is huge – not rhino-sized as sometimes implied), in the diet that local people ascribe to them, in their aquatic habits and in the aggressive dislike they have of elephants and other big mammals. Some descriptions of the mokele-mbembe provide it with a large horn, and some people say that these horned and hornless monsters are the male and female of the same species. Rather than assuming (as Mackal did) that people have muddled the two creatures and formed a confusing composite, it seems likely that Congolese views on these creatures are amorphous and flexible. They are, in other words, simply big, vaguely defined swamp monsters.

A third alleged Congolese mystery beast is the mbielu-mbielu-mbielu, another big aquatic or semi-aquatic reptile-like animal. Again, this creature was brought to attention in Mackal’s 1987 book, where it was suggested as a possible modern-day stegosaur, and in particular a stegosaur similar to *Stegosaurus*, the best-known member of the group. It’s difficult to be at all impressed or swayed by the case for this alleged animal’s existence. There are no named witnesses or even legends or tales, merely an instance in which a Congolese informant told Mackal that a stegosaur seen in a prehistoric animal book resembled the local beast known as the mbielu-mbielu-mbielu. According to this informant, mbielu-mbielu-mbielu is not only *Stegosaurus*-like, it is aquatic and it has algae growing on its back and on the plate-like structures protruding from its surface.

The idea that such a creature might exist is obviously tantalizing. However, what makes the case of the mbielu-mbielu-mbielu especially interesting is how pathetically poor the ‘evidence’ is, and how rash Mackal and other cryptozoologists have been when it comes to interpreting this record. If someone says that a stegosaur-like beast lurks in the Congo, there are several possibilities and alternatives that should be considered before we leap to any incredible ones. A description of a water animal with ‘plates’ on its back could refer to confused glimpses of a large turtle with a malformed shell, a freak crocodile with unusually prominent scutes or even a gnarly, floating branch or log, for example. We have no way of knowing what the mbielu-mbielu-mbielu account might have referred to, or even if it referred to anything at all. The point is that immediately thinking of ‘living stegosaurs’ is poor reasoning and does little but make cryptozoology less scientific than it already is.

Then there’s the nguma-monene. This is a slender, elongate, low-slung animal. Based on the two – yes, *two* – reports on record, it’s strongly aquatic, shaped like a snake, but with triangular projections along its back. Local lore apparently has it that the animal is 40 to 60 m long. A 1961 account describes how one of these creatures was observed for more than 30 minutes. Its key features were the ridge or frill that ran along its back and its flicking, forked tongue. The second account comes from 1971 and describes how missionary Joseph Ellis watched an elongate animal with a serrated back swim towards a bank and enter a stand of tall grass. The creature was perhaps 10 m long.

Mackal wrote about the nguma-monene and even featured a reconstruction of its possible appearance in his 1987 book. Based on the mention of a long, flicking tongue, he thought it most likely that it was a giant lizard. More specifically, the description of a long body led him to propose that it might be an important, late-surviving relict of the time when snakes emerged from among lizards. This is quite the radical proposal. As with many other ‘flesh and blood’ cryptozoological proposals it seems incredibly specific based on the scant details provided in the small number of reports. Nor does it seem like a convincing fit in any case: serrated dorsal ridges are not common in lizards, and are only really present in Iguania, the group that includes iguanas, agamas, chameleons and their kin. As for the forked tongue, this was only mentioned in the 1961 account.

Previously, Heuvelmans had collected African stories about monster snakes, sometimes called ngakoula-ngou and said to kill hippos and leave broad tracks perhaps a metre or more wide. Mackal suggested that these might refer to the same species as the nguma-monene, despite the fact that there are no points of similarity other than an elongate body. More important and more interesting is that several of the motifs we’ve already seen – an ability or willingness to kill big animals like hippos, a monstrous reptilian demeanour and an ability to leave giant tracks when stalking the land – are present here as well. Again, the concept that emerges is a vague one involving monstrous amphibious reptiles, not the tidily demarcated, zoologically sensible species of the cryptozoological literature.

Maybe giant snakes, forest-dwelling rhinos, wayward hippos, unusually large turtles and other large animals provided the original inspirations for these semi-mythical, persistently elusive beasts, and maybe there is a real zoological basis to these creatures. But maybe there isn’t. What emerges from consideration of all the accounts and writings on these alleged Congolose mega-beasts is that naivety, wishful thinking and poor consideration of evidence have been jumbled together with an enormously appealing, runaway myth deserving of science fiction – that of the lost world, the timeless zoological utopia in which ancient beasts have gone undiscovered and wise and brave maverick adventurers can make a name for themselves if only they try hard enough. And completing the scene for the colonialist wish that tropical Africa might be home to ancient mystery beasts from a bygone era are the abilities of Congolese people to be clever hosts to their exotic visitors.

Pterosaurs alive!

It doesn’t stop there. Those who’ve endorsed the possibility of the African tropics being home to this anachronistic menagerie have also taken seriously suggestions that pterosaurs – the ancient winged cousins of the dinosaurs – might also inhabit the same region. The concept of the ‘living pterosaur’ is also now a recurrent and familiar feature of the cryptozoological literature, and has been ever since the publication of *On The Track*.

Among the most impressive of accounts usually discussed in the writings on this subject is that recounted by Ivan Sanderson (again!) following an event that happened in Cameroon in 1932. Sanderson and his colleague Gerald Russell were exploring the Assumbo Mountains when they had to duck to avoid a giant, black, membranous-winged creature that flew directly at them, chattering its teeth. Sanderson and Russell both estimated the creature’s wingspan at an impressive 4 m. The local people identified it as an *olitiau*, a name now regularly used in discussions about mystery winged beasts. While Sanderson’s account is often discussed alongside stories about ‘living pterosaurs’, he stated on several occasions that the creature he saw was not a reptile but a gargantuan bat.

As mentioned elsewhere in this book, the problem with Sanderson is that doubts are attached to his veracity as a source. Over the course of his career he claimed he saw an extraordinary number of unusual zoological events and creatures and was associated with several that were later shown to be certain hoaxes. Most notable among these were the giant penguins – 4.5 m tall – said to have left their immense tridactyl tracks around the coast of Florida during the 1940s. Sanderson claimed a sighting of one of these penguins himself. During the 1980s a man called Tony Signorini came forward to say that he and Al Williams (deceased as of 1969) had perpetrated the hoax. It was always a ridiculous joke of a story in any case, and Sanderson’s involvement does not put him in a good light. We’ve already seen that Sanderson was also duped by the infamous ‘Minnesota iceman’ case.

Moving away from tropical Africa, a spate of ‘living pterosaur’ accounts have also come from the United States, and especially from Texas. Most of these sightings date to the 1970s and approximately coincide with the discovery of *Quetzalcoatlus*, a giant Texan pterosaur said at the time to have a wingspan of about 15 m – its estimated wingspan has since been reduced to a more modest 10 or 11 m.

The phenomenon whereby descriptions in the media inspire a burst of claimed sightings of the same thing is well known in the literature on mysterious phenomena. These events are termed ‘flaps’ and typically die down, with no resolution, after a few weeks. The very idea that a given creature might be present in an area means that people have this creature on their minds, thereby making them more likely to misinterpret the animals and phenomena that they encounter. Plus, of course, there are attention-seekers and hoaxers who want in on the fun.

Alleged ‘living pterosaur’ accounts also come from Mexico, Brazil, Argentina, Madagascar, New Zealand, Vietnam and Crete. Virtually all are one-offs that did not inspire a rash or glut of subsequent sightings. However, a new focus of interest has emerged as far as ‘living pterosaur’ sightings goes: New Guinea. Thanks to magazine articles, TV shows, books and interest online, a winged, pterosaur-like beast called the ropen is one of the 21st-century’s great cryptozoological superstars. Quite why this mystery marvel went mostly ignored for so long is peculiar, but older accounts dating back to the 1970s and even the 1940s have been uncovered.

Based on the view of this creature endorsed by its proponents, the ropen is a remarkable beast. It’s nocturnal, and large, with a wingspan typically between 5 and 7 m. It seemingly combines features known in several fossil pterosaurs, possessing a head crest like that of the North American Cretaceous pterosaur *Pteranodon* and a long tail equipped with a vertical diamond-shaped vane at its tip like that of the German Jurassic pterosaur *Rhamphorhynchus*. One eyewitness identified the tiny Jurassic pterosaur *Sordes* from Kazakhstan as being most similar to the ropen he saw, meaning that this fossil animal (with a wingspan of about 60 cm) is regarded as the ropen’s specific identity by ropen proponent Jonathan Whitcomb. Having said that the ropen’s wingspan is typically between 5 and 7 m, a super-sized individual seen flying during the day in 1994 was said to have a wingspan of about 15 m. Oh, and it’s bioluminescent ... it glows in the dark, and leaves a glowing trace in the night-time air as it flies along.

Numerous eyewitness accounts said to describe the ropen have been collected. A few do describe a winged, long-tailed flying creature but a great many don’t describe ‘the ropen’ at all. Instead, they describe night-time flashes of illumination, or lights seen overhead at night. Then there are those accounts in which a creature is said to have visited a grave and removed the body of a recently deceased person. In such cases (one is said to have occurred in 1949, when the ropen was witnessed by a man living in Opai Village, Umboi Island), the animal is not described, making any link with the flying pterosaur-like creature and the night-time lights suspiciously tenuous.

Evaluating ‘living pterosaurs’

What are we to make of these various ‘living pterosaur’ accounts from around the world? In considering the stories from the United States and tropical Africa, some authors have proposed that pterosaurs related to *Pteranodon* and *Quetzalcoatlus* might really have survived to the present in remote regions – another classic example of the prehistoric survivor paradigm. An alternative idea mooted in the paranormal literature is that animals of the past are able to move through dimensional windows and thereby appear temporarily in our own time. Such ideas are obviously not compatible with a view of cryptozoology that is consistent with mainstream zoology and perhaps give some idea of the fabulous nature of certain writings that occur around the edges of the cryptozoological canon.

The possibility that pterosaurs might have survived beyond the end of the Cretaceous and into the modern day is not, in principle, impossible, but it does contradict the data we have, and it is not supported by anything other than vague and questionable eyewitness accounts. Furthermore, these sightings don’t really describe animals that sound much like pterosaurs at all. They’re mostly descriptions of vague winged horrors, and witnesses never describe the specific features unique to pterosaurs, such as their peculiar wing anatomy.

In the most detailed of the ropen accounts from New Guinea, the features reportedly seen by a witness were observed in an animal said to be 30 m up in the air, meaning either that the witness – a Papuan man named Gideon Koro – was lying or embellishing his account, or the interviewer was misunderstanding or misinterpreting the story. The very ‘best’ ropen accounts related so far involve substantial prompting and leading of the witnesses and a great deal of confusion over what’s being claimed. In fact, some published interviews between investigator and eyewitnesses read like textbook examples of how not to do an interview.

These eyewitness accounts are better interpreted as tall tales, hoaxes or sightings of other things before we can begin seriously to entertain the fact that they’re anything to do with a group of animals that died out 66 million years ago. Consider the supposed ‘living pterosaur’ accounts of the United States. Many people are not especially interested in the natural world, have little desire to read or learn about it and receive most of their information about animals and plants via a sort of cultural osmosis. It’s a fact that many prehistoric animals are surprisingly prevalent in our culture – images of dinosaurs, pterosaurs, *Dimetrodon*, sabre-toothed cats and mammoths are readily encountered via cartoons, movies, advertising and the products of the toy and entertainment industry. The result is that there are a great many people who have some concept of what a pterodactyl is, yet are stunningly naive as goes the living animals that live on their own doorstep.

This is a long-winded way of saying that *some* people are more likely to think ‘pterodactyl!’ on seeing a large, unfamiliar winged creature than ‘heron’, ‘crane’ or ‘eagle’. The majority of winged monster sightings are almost certainly mistaken or embellished encounters with such known species. In some parts of the world, frigatebirds, shoebill storks and large bats have probably also contributed to the myth of the living pterosaur.

Many of the sightings said to be of ‘living pterosaurs’ or of mystery ‘big birds’ are actually of large birds belonging to known species, including eagles, herons and storks. Frigate birds like the one shown here have almost certainly been observed and misidentified by naïve eyewitnesses. Frigate birds are mostly found in the tropics, but they sometimes wander as far as Alaska, Newfoundland, Scotland and New Zealand.

What of the bizarre ideas that the ropen glows at night, or leaves a luminous trail as it flies? One explanation for these lights it that they’re actually aircraft, and the claim has been made that the glowing ropens do indeed travel along a route known to correspond to a flight-path. The idea that people have been misidentifying small planes as giant, modern-day, glow-in-the-dark pterosaurs might be hard to swallow, but it’s more likely than the possibility that they really are seeing giant, modern-day, glow-in-the-dark pterosaurs.

None of the eyewitness accounts collected so far convincing. An obvious, overarching aspect of the ropen phenomenon is its association with creationism and a religious agenda. One of the most vocal, visible champions of ropen existence is researcher and writer Jonathan Whitcomb, who makes it very clear throughout his 2006 book *Searching for Ropens* that his personal belief in the Christian god and his creationism-based world-view are integral to his interest in the ropen. Long sections of his book are devoted to disproving the possibility that evolution might have happened; he even claims to have discovered a statistical test that demonstrates it. He quotes a conversation in which ‘I told him [a Papuan counsellor/government official] of the problems we have in America because some disbelieve in God, and I mentioned how finding ropens could help’.

Whitcomb is of course entitled to hold whatever views he wishes on issues of faith, as are we all. The point is that this proselytizing does nothing to further the case for the ropen’s existence and only serves to show that the author has a heavily biased world-view and agenda. This links to an issue obvious throughout the cryptozoological literature written by creationists. People of faith – missionaries, pastors, members of congregations and so on – are consistently treated as trustworthy, reliable tellers of anecdotes whereas they may not be, and may in fact be consistently *less* reliable, especially when speaking with an exotic visitor who identifies religious motive as the reason for their visit.

The poor quality of the evidence aside, the most obvious issue surrounding ideas about surviving sauropods, pterosaurs and other ancient beasts is that all the creatures concerned – *all of them* – precisely match the artistic depictions of decades past. The mokele-mbembe does not resemble the way we think sauropods really looked – a view based on copious good fossil evidence, much of it only discovered and published within the last two decades. It is, instead, a carbon-copy of sauropod portrayals of the early 1900s, of a time when sauropods were incorrectly imagined to be aquatic animals that spent their time submerged in lakes and swamps. Similarly, those ‘living pterosaurs’ of the cryptozoology literature are not the sleek, furry, attractive beasts consistent with recently discovered fossils. Rather, they are dark, naked, leathery-winged monsters – copies of the inaccurate reconstructions of decades past.

The whole phenomenon of ‘living sauropods’ and ‘living pterosaurs’ consists, therefore, of cultural anachronisms, not zoological ones. This makes sense given the early 20th-century genesis of the idea, in a time when the ‘lost world’ meme became so popular in science fiction and so appealing to authors of romantic inclination. A naive, colonial view of the tropics and its biology and people were the ideal setting for what would prove to be an outdated and anachronistic view of prehistoric survivors, none of which ever really existed, and all of which are beloved of those – creationists – with biased, agenda-driven motives.

Chapter 6 - Mystery Marsupials and Other Oddities

Most of the land-dwelling ‘superstar creatures’ associated with cryptozoology come from Europe, North America, Asia or Africa. But Australia has been there right from the start of the story, too, with an intriguing collection of mystery mammals, giant lizards and other alleged mystery beasts that somehow seem appropriately exotic. As we’ll see, evaluations of these creatures have to combine fair recognition of the fact that the Australian continent features vast, remote regions of wilderness with a pragmatic view on the anecdotal, highly dubious nature of the mystery animal reports themselves.

P.Z.S. 1884. Pl. XXXII.
J. Smit lith.
Hanhart imp.
DENDROLAGUS LUMHOLTZI.

Several surprisingly large mammals were discovered in Australia during the late 1800s and early 1900s. This is Lumholtz’s tree-kangaroo, discovered in 1883 and named in 1884. To the naturalists and biologists of the time, this find must have made the existence of a large undiscovered marsupial such as the Queensland tiger a plausible possibility.

Among the most famous of Australian mystery beasts is the so-called Queensland tiger.

According to accounts collected between the 1870s and 1950s, the Queensland tiger is a long-tailed, striped predatory mammal, similar in overall demeanour to a large cat, similar in size to a puma or leopard and capable of similar feats of predatory behaviour. The claimed existence of the Queensland tiger became known to the scientific world at about the same time as remarkably odd, real creatures were being reported from Australia and nearby. The northern hairy-nosed wombat was named in 1873, both Lumholtz’s tree-kangaroo and Bennett’s tree-kangaroo were discovered during the 1880s and the Black wallaroo was only named in 1904. These and other discoveries meant that the existence of a new large marsupial species long seemed a reasonable possibility, and a consequence is that the tiger was regarded as a real marsupial species awaiting discovery by at least a few mainstream zoologists. It has, for example, even featured in field-guides on the Australian mammal fauna.

A handful of eyewitness accounts from the late 1800s and early 1900s describe a striped, long-tailed east Australian mammal, assumed to be a cat-like marsupial and thought to look like the artistic reconstruction shown here.

A few ‘classic’ sightings have been instrumental in shaping views of what the Queensland tiger is supposed to be like. Several refer to a large, striped beast like that described above, said to have frightening predatory prowess. Among these is colourful piece of text penned by the prolific Australian author Ion Idriess. Idriess wrote about the tiger as if it was a familiar beast, describing in particular an occasion in which he watched one of the animals leap up and tear the throat from a large, cornered kangaroo. Doubt about the value of his account comes from the fact that the exact same story features, word for word, in D. H. Lawrence’s 1923 novel *Kangaroo*. While this raises the issue of plagiarism (whether Idriess or Lawrence did the plagiarizing is unclear), more important for our purposes is the fact that any overly dramatic tale that features in fiction is difficult to accept as a real-life story.

However, a great number of accounts describe smaller, less imposing beasts that are, nonetheless, thought to have been examples of the same species. A creature seen in 1900 and said to have been ‘more than 60 cm long’ was interpreted as a young Queensland tiger. But what about the more prosaic suggestion that it was one of Australia’s smaller boldly marked marsupials, like a quoll, or even a non-marsupial like a striped feral cat? Quolls – members of the dasyurid family, as are Tasmanian devils – have often been referred to as ‘native cats’ or ‘tiger cats’, and several accounts listed as encounters with the Queensland tiger could well be exaggerated or distorted descriptions of these animals. In fact, the roster of alleged Queensland tiger accounts shows that people have attached the label ‘Queensland tiger’ to creatures that turned out to be foxes, feral dogs or pigs.

One of the best pieces of evidence used to support the Queensland tiger’s authenticity is a drawing of a footprint, observed in northern Queensland in 1871 and described in an 1872 report by Walter T. Scott of the small coastal town of Cardwell. Scott was actually not the witness of the track: it was one of a sequence discovered by a licensed surveyor called Mr Hull after he and his party of five were startled out of their tents one night by a loud roar.

Zoologist and author Malcolm Smith evaluated the illustration in 2012 and argued that it can only have come from a large, unknown, predatory mammal. The drawing shows the print as broad and combining a broad, oval pad with four long finger pads, each tipped with a short, slim, pointed claw mark. Its original size was perhaps 12 cm across (though this has been confused by the fact that the track was reduced in size when reproduced in print). The drawing doesn’t match the prints of dogs, cats, thylacines or any other contender, and has a novel anatomical configuration. Smith noted that what might be a second depiction of the same sort of track is also present in indigenous rock art preserved at Carnarvon Gorge National Park, though in that case the print is shown with five digits, not four.

While the Cardwell footprint is an intriguing piece of evidence, the fact that we only have a single old illustration to go on isn’t particularly useful, especially given that drawings are often not reliable reproductions of reality. Hull’s drawing, it has to be said, is not particularly realistic in appearance anyway, being highly schematic and unlike the real tracks of predatory mammals (marsupial or placental). It’s therefore difficult to accept it as an especially important piece of evidence. The Carnarvon Gorge National Park rock art cannot be regarded as representing a track of the same kind of animal given the different digit count – one of the key things an illustrator of tracks really has to get right!

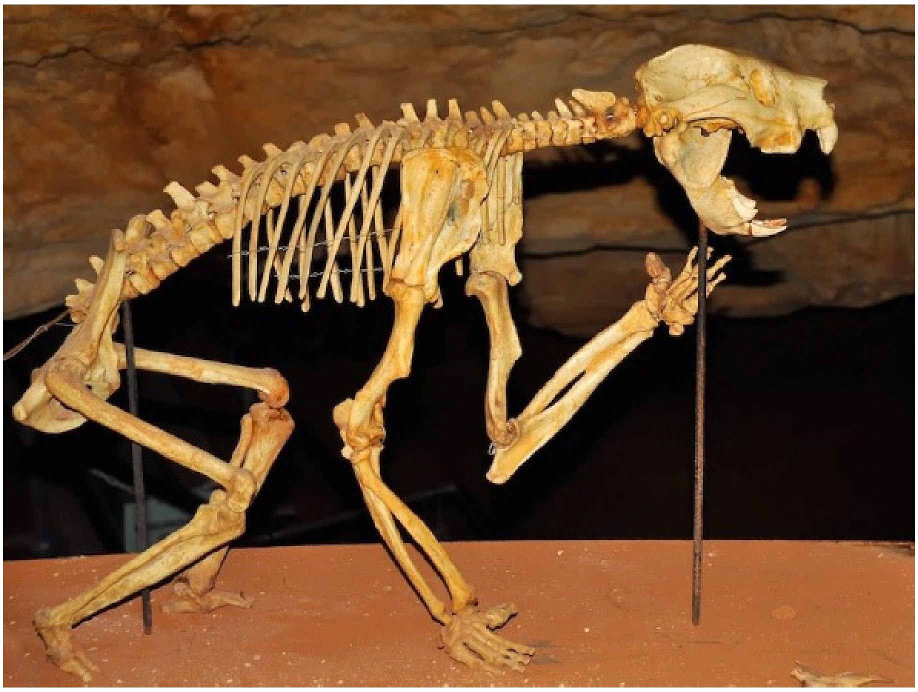
Beyond dubious eyewitness accounts and a drawing of a footprint, is there anything else that might support the Queensland tiger’s existence? Indigenous Australian lore is said (in the region of Herbert River Valley, Far North Queensland) to refer to the yarri or yaddi, a large striped predator of rocky places, able to climb trees and willing to bite people when provoked. Today, it is popularly supposed that the yarri and the Queensland tiger are one and the same thing. However, when asked to bring yarri specimens to famous German zoologist and animal collector Carl Lumholtz, indigenous people only succeeded in bringing him dead quolls.

Maybe we’ve misunderstood the nature of the term ‘yarri’. The only way of resolving this would be properly to investigate the language and terminology of the people who used it. It might be that ‘yarri’ was simply a local name for quoll, or for a group of predatory marsupial species that *included* quolls.

Lumholtz's account – the one piece of evidence always discussed in conjunction with the yarri and its supposed link with the Queensland tiger – cannot be regarded as providing support for the tiger's existence since his description was rather vague. Furthermore, his trail ended with dead quolls, not a new, cat-like marsupial predator.

What was the Queensland tiger?

A popular idea in the cryptozoology literature is that the Queensland tiger might be a surviving member of a marsupial group otherwise known only from the fossil record: the thylacoleonids or marsupial lions. This group includes species similar in size to domestic cats and lynxes as well as leopard- and lion-sized giants. *Thylacoleo carnifex* – the largest and best-known member of the group – was an enormous predator with a broad, massive skull, forward-pointing, incisor-like teeth, slicing cheek teeth, a giant thumb claw, and a body shape perhaps suggestive of a lifestyle that involved climbing and ambushing prey animals from cover.



The idea that the Queensland tiger might be one and the same as the Pleistocene fossil marsupial *Thylacoleo* has been popular in cryptozoological circles. This possibility has been enhanced by the view that *Thylacoleo* was cat-like when alive. However, *Thylacoleo*'s weird proportions and anatomy – evident in this reconstruction skeleton – mean that it must actually have looked very different. Indeed, it might have combined features associated today with koalas, wombats and possums.

Rock art said to depict *Thylacoleo* is known from Western Australia. The images depict a striped quadrupedal animal with a blocky head, large front paws, a long, slender tail and transverse stripes that extend from the base of the neck to the root of the tail. We don't know for sure that these images really depict *Thylacoleo*, but they're a good match and it's difficult to suggest a better alternative. Given that the Queensland tiger is imagined as a striped marsupial predatory, could this rock art show that the Queensland tiger and *Thylacoleo* are one and the same? The skinny tail depicted in the rock art is certainly different from the long, thickly furred one supposed to be a feature of the Queensland tiger.

Indeed, while *Thylacoleo* is sometimes described or pictured as a cat-like predator, its skeleton shows that it was nothing of the sort. Its limb proportions were completely different and its giant thumb claw, broad face and weird teeth would have been obvious in life. A precise modern analogue for *Thylacoleo* is absent, but it surely more resembled a giant, predatory possum or wombat than a cat. In view of this, it seems doubtful that anyone encountering a live *Thylacoleo* would really be tempted to consider it a 'tiger'.

None of the unusual features obvious in *Thylacoleo*'s skeleton were ever commented on by any of the claimed Queensland tiger witnesses. Actually, having said that, there are a few eyewitness accounts that do describe weird-looking, gnarly-toothed animals that might be interpreted as potential modern-day marsupial lions, but these sightings pertain to black, panther-like animals, not to the striped Queensland tiger. According to Rex Gilroy's 1993 book *Mysterious Australia*, witnesses across Australia have indeed reported large predators that differ obviously from cats in overall form, have protruding tusk-like teeth and are referred to vernacularly as 'devil dogs'.

Even better, Gilroy says that these animals have sometimes been seen bearing pouches containing young. Gilroy quotes Craig Black who, after seeing a 'devil dog' in Ben Lomond National Park, Tasmania, in 1961, said 'I am positive I saw that it was carrying a pouched cub'. It's difficult to know what to make of these reports because they don't match the eyewitness data collected by other mystery animal researchers based in Australia. Perhaps some describe encounters with feral dogs. But as for specific sightings that pertain to pouched panthers ... Gilroy reports them as second-hand encounters and there is, to put it mildly, considerable doubt attached to their veracity, as there is to virtually all of the claims that Gilroy makes in his books and articles.

The idea that *Thylacoleo* survived to modern times is also difficult to accept given that there's no indication from the fossil record that this might have happened. It's popular in the cryptozoological community simply to ignore complaints of this sort and hope that the creature concerned hung on while somehow dodging the fossil record – the idea being that this has happened on enough occasions for us to consider it likely that it might have happened again.

If the Queensland tiger never was a marsupial lion, what was it really? A large, striped predatory marsupial matching the tiger's appearance could perhaps be a large dasyurid of some sort, perhaps a short-faced relative of quolls or an extravagant, striped relative of the Tasmanian devil. The suggestion has also been made that the Queensland tiger might have been a short-faced thylacine. This appears unlikely given that all members of the thylacine family (there are several fossil species in addition to the recently extinct one) are long-snouted predators with dog-like faces. Possible support for the idea of a novel striped marsupial carnivore comes from Gary Opit's sighting of 1969. Opit's animal emerged in front of him while he was driving at night along the Pacific Highway in far south-eastern Queensland. It was about 1.5 m long in total with a robust build, a long, thickly furred tail lined with dark vertical bars, pricked ears, a dog-like snout, and stripes across its body.

As interesting as this account is (and Opit has gathered several that describe animals similar to the one he saw), the problem is that his long-snouted, mid-sized mammal sounds quite different from the Queensland tiger of tradition. We'd have to account for a lot of exaggeration and embellishment before accepting that the descriptions refer to the same species.

What seems most likely that the whole 'tiger' phenomenon represents a mixture of tall tales and confused sightings of native marsupials, feral dogs and large cats. The idea that thylacines of one sort or another might explain the sightings obviously depends on thylacines surviving until far more recently than evidence indicates they have, so can't be taken as an available competing idea – it has many problems of its own.

A possibility suggested by marsupial expert Roger Martin is that some 'tiger' sightings were actually of tree kangaroos encountered at ground level. Tree kangaroos are not especially familiar animals, they're rarely seen and few people are aware of their appearance on the ground. When moving at speed, the long, tasselled tail trailing out behind, they can look somewhat cat-like in the back part of the body, and it's notable that the Queensland tiger is imagined as having a long, cylindrical, tasselled tail very similar to that of a tree kangaroo. Maybe some 'tiger' accounts can be explained in this way, but it doesn't work as a particularly convincing explanation given that few descriptions pertain to the animal's back end and tail alone.

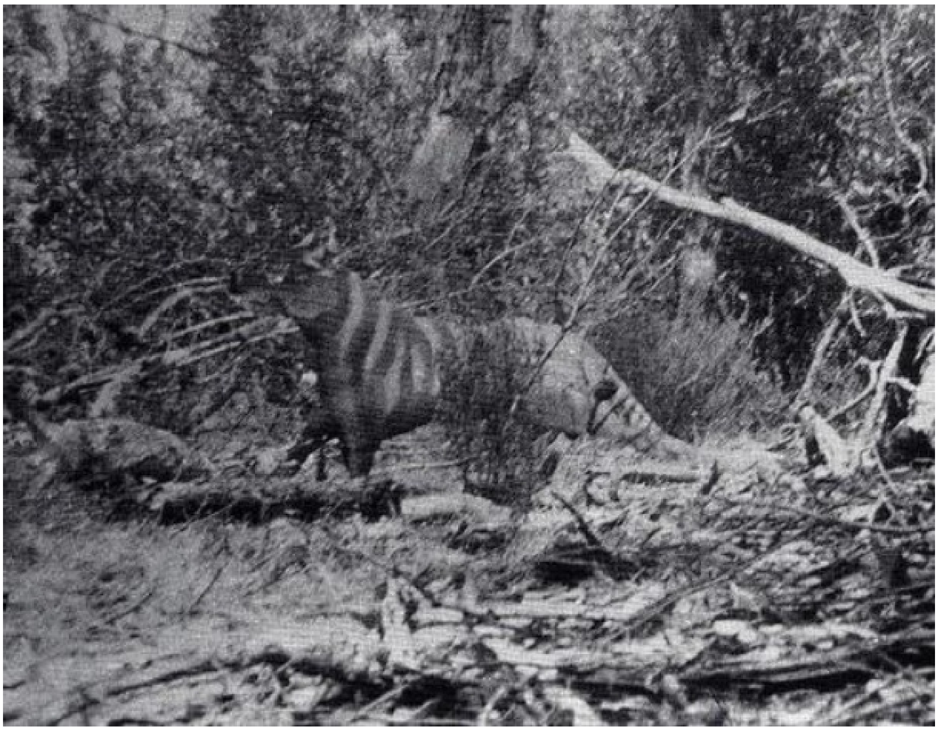
The intriguing possibility remains that Australia is home to an undiscovered predatory marsupial, albeit one whose size and ferocity is not close to that of the tiger described in the cryptozoological literature. Australia is certainly one of the places in the world most likely to harbour a mid-sized mammal that has escaped scientific recognition for longer than expected. Of possible relevance is that some of the kangaroo species that Australia lost to extinction between the 1870s and 1960s (including the Broad-faced potoroo *Potorous platyops*, Desert rat-kangaroo *Caloprymnus campestris*, Central hare wallaby *Lagorchestes asomatus*, Toolache wallaby *Macropus greyi* and Crescent nailtail wallaby *Onychogalea lunata*) were only scientifically discovered as late as the 1930s.

As to whether or not there is or ever was a leopard-sized, long-tailed, marsupial 'cat' ... with only anecdotes and eyewitness recollections to go on, we have to conclude not.

Rilla Martin's 'Ozenkadnook tiger' photo

There are a few fascinating spinoffs from the Queensland tiger story. In 1964, Rilla Martin was driving along a countryside road near Ozenkadnook in western Victoria when she apparently caught sight of a dog-sized, striped animal in the woods at the side of the road. She happened to have her box Brownie camera right next to her, and succeeded in taking a single image of the creature as it ran from right to left. Local sightings of a striped animal thought to be a mainland thylacine had already led to the idea of a creature dubbed the 'Ozenkadnook tiger', and Martin's photo has consequently become known as the 'Ozenkadnook tiger photo'. However, the creature in her photo doesn't look at all thylacine-like: it has tall shoulders, a deep, short-snouted head, and broad, pale stripes.

In view of these features, the suggestion that Martin encountered and photographed a live marsupial lion has been made on occasion, and some researchers have even claimed that the shape of the creature's head matches such an identity quite well. The possibility that the case was a hoax, and that a cut-out shape of a tiger-like animal was posed in the bush and photographed, has also been made. Martin's brother denied this possibility as recently as 1999. The fact that the creature is so hard to interpret does suggest the possibility of a hoax. Furthermore, Martin's supposed ability to stop driving, erect her box Brownie camera and then take a reasonably good photo of a running animal is slightly suspicious. Taking photos of running animals from a moving car is maddeningly difficult even with a modern point-and-shoot digital camera that takes a second or two to fire up.



Rilla Martin's 'Ozenkadnook tiger' photo of 1964 has always been an enigma. It seems to show a tall-shouldered, striped mammal, yet with the stripes looking pale rather than dark. It doesn't match any known species. Debate continues as to whether it is an authentic image of a real animal.

The ideal way of resolving – or, at least, of trying to resolve – this case would be to examine the original photo. But it was lost by the newspaper that borrowed it during the 1960s, meaning that we only have reproductions from books, magazine articles and newspapers. For now, we can go no further with the image, meaning that all we have is conflicting opinions on its veracity. Martin herself was interviewed on camera and versions of this recording are available to researchers today. Her behaviour and speech is convincing overall, but there are a few tiny quirks in body language that – some suggest – might imply that she was not being completely truthful when answering questions.

As is the case with so many of these stories, we're almost certainly never going to be able to determine the 'truth' at the bottom of this case. While some researchers cling to the idea that Martin photographed a unique animal that was perhaps a modern-day *Thylacoleo*, the ambiguity and weirdness of her photo, combined with the incredible fortuity of her apparent blind luck in taking that photo, strongly suggest that it was indeed a hoax.

The bunyip

Australia is also home to a frightening freshwater monster called the bunyip, sometimes said to be a seal-like creature that might be dangerous to people. Actually, one of the problems with the term 'bunyip' is that it's been applied to monsters of many different kinds, some of which were said to be aquatic, while others were reputedly amphibious or even terrestrial but merely seen in the vicinity of water. Some indigenous tribes identified the bunyip as an emu-like animal, and others described a large, bulky, quadupedal mammal with thick limbs and a short or absent tail. There have been occasional suggestions that creatures of this sort represent late-surviving examples of the giant, rhino-sized marsupial herbivore *Diprotodon*, generally thought to have died out about 45,000 years ago. These suggestions are fairly ludicrous – for one thing, the accounts don't describe animals that sound at all *Diprotodon*-like. The possibility exists that some old stories from indigenous Australians about giant, bulky 'bunyips' actually describe naive encounters with the cattle or water buffalos that Europeans introduced to the continent.

The term ‘bunyip’ has been applied to various different Australian monsters, most of which are associated with lakes or pools. The European colonists of Australia often imagined the bunyip as a short of shaggy-furred, dog-like mammal, perhaps an aquatic marsupial. The artist’s image shown here plays on the idea that bunyips might be cryptic and hard to spot when making forays on land.

Thanks to reports that seemingly describe a long-furred, vaguely seal-like animal – sometimes described as having large ears and flipper-like appendages – there has long been a suspicion that bunyip sightings might also include descriptions of a native swimming mammal, perhaps an aquatic marsupial. The idea that Australian marsupials might have evolved their own amphibious or aquatic seal-like species is, to those of us interested in cryptozoology and speculative evolution, a highly appealing concept. We know that marsupials are capable of adapting to an amphibious existence because tropical America is home to the yapok *Chironectes minimus*, a swimming opossum that dives and hunts crustaceans and other aquatic prey along the bottoms of streams and pools. A few other opossums also have amphibious habits.

Could, then, a seal-like marsupial be an evolutionary possibility? An obstacle to this suggestion is that the under-developed, pouch-dwelling babies of marsupials typically start life with large, grasping hands that they use to crawl from the vagina to the pouch. Perhaps, some biologists have argued, this makes it difficult or impossible for an aquatic marsupial with flipper-like limbs to evolve. Furthermore, the keeping of babies within a pouch seems inconsistent with a life that involves a substantial amount of time spent in the water. However, the great thing about evolution is that there are often ways round problems or obstacles. We might imagine a marsupial bunyip that grows flanges or fringes on its fingers that allow the hands to be used as paddles, yet lacks these features as a newborn and hence can still crawl to its mother’s pouch. And a watertight pouch sealed by a sphincter is already known in the yapok. Or what about the idea that the bunyip has done away with the pouch entirely and gives birth to babies that develop within a burrow? The concept of a pouchless marsupial is not radical since we know of opossums and other species that either have a strongly reduced pouch or lack one entirely.

As enjoyable as these speculations are, we remain bereft of good data that might indicate that the bunyip was ever real. All of the accounts are vague and also quite old, and none contain enough information to allow a confident identification to be proposed. ‘Bunyips’ of indigenous lore might have been a great many things, some inspired by encounters with real animals, others not existing in the real world, but the seal-like bunyips reported by Europeans might really have been wayward pinnipeds (that is, seals or sea lions). Pinnipeds of several species are known sometimes to travel upriver and end up hundreds of kilometres inland. Pinnipeds are also capable of covering kilometres of dry land when the need arises, and are surprisingly good at traversing steep terrain, even clambering up rocky bluffs many metres tall. Wayward pinnipeds cannot explain all bunyip sightings – no one solution can – but they may well explain many of them.

Monster monitors

We’ll end our tour of Australian mystery beasts with a brief look at some of the other creatures said to have been seen in the outback. Australia has a diverse mammal fauna, but it’s also inhabited by an amazing diversity of reptiles, lizards in particular. Among the most charismatic and significant of these are the varanids or monitors – the family that includes the famous Komodo dragon of Indonesia as well as more than 70 other species. Monitors – the Australian members of which are often called goannas – are smart, adaptable lizards, and species in Australia may partially occupy the ecological roles filled elsewhere by predatory mammals.

As recently as 30,000 years ago, Australia was home to what must have been the most spectacular varanid of them all, the gigantic *Varanus priscus*, long known as *Megalania* and still called this for reasons of convenience. Size estimates for *Megalania* vary considerably since there are no complete skeletons and ideas differ on how it might have been proportioned. However, it was almost certainly more than 5 m long and more than 300 kg in mass. Recent discoveries have also shown that the Komodo dragon itself was not unique to the islands of Indonesia, as long assumed, but actually inhabited Australia where it lived alongside *V. priscus*.

It's with this knowledge of the giant monitors of the past that we look at alleged sightings from modern Australia that tell of encounters with similar creatures. In 1983 and again in 1986, campers in Victoria and Western Australia discovered tracks said to have been made by giant goannas, in the former case estimated to have been between 3 and 5 m in length. Could these tracks show that *Megalania* might still survive? Working out an animal's size from its tracks is difficult and people – even experts – frequently provide incorrect or exaggerated estimates. What seems most likely in these cases is that people probably did encounter the tracks of very large goannas but overestimated the creature's size.

A few remarkable eyewitness accounts describing actual gigantic goannas, and not just their tracks, are also on record. In his 1995 book on mysterious phenomena from Australia, author and investigator Rex Gilroy recounted several such events. In a case from 1982, a Mr Walter Lake is said to have seen a goanna perhaps 6.6 m long run across the road in front of his car near Karratha, Western Australia. Even more incredible is a story from 1970 where a group of travelling friends in Arnhem Land, Northern Territory, reportedly saw an elephant-sized goanna, the tail of which was nearly 5 m long alone. On being seen, it reared up into a bipedal pose, achieving a standing height of 2.4 m. And yet other accounts of gargantuan lizards 7.5 m, 10 m and even 12 m and 15 m long – yes, far bigger than the largest authenticated crocodile or great white shark, bigger even that most specimens of *Tyrannosaurus rex* – are also recounted by the same author.

As exciting as these accounts appear, they almost certainly can't be taken at all seriously. The size and bulk of some of the creatures claimed to have been witnessed beggars belief. It's not difficult to take seriously the possibility that Australia might be inhabited by unknown monitor species that are perhaps a metre or so in length, but the notion of rhino-sized, elephant-sized and *T. rex*-sized monsters going undiscovered in the outback is not only unrealistic, it's ridiculous and categorically impossible.

But it would seem that there's little substance to these stories anyway. Attempts by Australian researchers to track down the giant monitor witnesses reported by Gilroy have been unsuccessful, the implication being that they didn't exist and that the events themselves are fabrications. You might remember similar things said of the black 'devil dogs' described by Gilroy, too. Remember that accounts included within the cryptozoological literature have to be checked and confirmed and simply may not be authentic at all.

Seen from the perspective of the cryptozoological literature, Australia potentially has a most exciting fauna – its mystery beasts are fitting for a continent ruled by marsupials, monitor lizards and flightless birds. But despite a keen desire to see striped marsupial 'tigers', seal-like water monsters and gigantic goannas, evidence has not come forward on any of these creatures, nor do published eyewitness accounts or anecdotes serve as anything especially consistent, reliable or trustworthy. Many of these accounts look increasingly like tall tales and yarns or embellished encounters with misidentified but smaller animals.

We might say that the inclination to construct such accounts is a trait common to all humanity, but it could also be that Australia is especially prone to this sort of thing. If this is the case, it could be a consequence of the vastness, seeming emptiness and wild nature of rural Australia. A key fact about the Australian population (the European migrant population, that is) is that the majority of it inhabits urban environments. The frontier nature of the outback may mean that those frequently spending time in this environment have felt compelled to paint a more exciting vision of the region than was really accurate. A compelling sociological explanation for Australia's monsters is that European settlers who spent time in the outback would claim to encounter, or know of, large and potentially formidable beasts beyond the experience of their urban cohorts. Combine this with a rich indigenous lore of inexplicable beasts and the seeds of diverse cryptids became planted in the continent's collective consciousness.

Chapter 7 - The Changing Face of Cryptozoology

For all the efforts of Ivan Sanderson, Bernard Heuvelmans and their colleagues and followers, the primary tenet of cryptozoological literalism has failed. This tenet is that myths, ethnic knowledge and eyewitness accounts pertaining to mysterious creatures provide evidence for the existence of numerous undiscovered species. There’s little doubt that new large animal species await discovery, even today, but there’s no good reason to link them to the classic cryptids of the cryptozoological literature. Sceptical analyses of classic cryptozoological accounts – of the famous sea monster sightings of the 19th century, of the best-known Loch Ness monster accounts, of bigfoot and yeti observations – have shown that the incidents concerned cannot be accepted as encounters with unknown species. Instead, most can be soundly declared as hoaxes, mistakes or embellishments. Even the very best sea monster accounts can be explained as confused sightings of known species. Giant sea monster carcasses have all turned out to be the rotting remains of known species. There are no Loch Ness monster photos that have withstood scrutiny. The Patterson-Gimlin bigfoot film is almost certainly a hoax. Bigfoot and yeti tracks have failed to be convincing. And stories about living sauropods, pterosaurs and giant cat-like Australian marsupials can all be explained as tall tales, hoaxes and exaggerations, not as descriptions of encounters with real unknown animals.

We’re left with the fact that the only mystery animal reports that haven’t been sufficiently explained are inexplicable due to their ambiguity. They *might* be accounts of unknown species, but they might be a great many things, like hallucinations or fleeting encounters with animals of known species. The scientific principle of parsimony (the idea that we should favour simple explanations and fewer assumptions wherever possible) means that we’re not left with much to go on when it comes to supporting the existence of cryptids. Certainly, there’s not much to bank on if we demand more than untrustworthy anecdotes or half-remembered accounts, as we should.

This conclusion is in keeping with copious evidence on how people perform as eyewitnesses. Studies have shown, time and time again, that people are, essentially, terrible ‘data recallers’. They frequently make incredible blunders, memories and observations warp over time and are horrendously prone to later influences, phantom memories abound and what people remember and describe to others is simply not the same as what they see in the first place. If cryptozoological literalism has one erroneous belief at its core, it’s the idea that eyewitness data is reliable, sufficiently so that we can rely on it at face value as a firm indication that a set of unknown animals really exist.

This view – the one explored throughout this book – is not exactly novel or controversial. It’s the favoured view of the vast majority of zoologists and other scientists, and the one encountered most frequently among people who can be considered well-informed as far as the science of perception goes. The view that mystery creatures might be real and awaiting discovery is the more controversial, more remarkable position and the one with which the burden of proof lies. As demonstrated by the discussions of cryptozoological research that appears throughout this book, a dedicated pro-cryptid community exists, consisting mostly of ‘believers’ who have been anything but conservative in how they’ve interpreted the creatures in which they believe. Cryptid proponents ignore or reject (or are perhaps unaware of) the view that eyewitness testimony is insufficient; they maintain strong beliefs in the existence of cryptids, beliefs that persist despite consistent arguments from more sceptical researchers. Why do people maintain such beliefs given the lack of good or convincing evidence for cryptids?

Why believe in cryptids?

It is sometimes implied that cryptozoological proponents are blind believers, their acceptance and endorsement of given mystery animals being akin to unquestioning religious faith. This is certainly true in some cases, but doesn’t seem to be especially widespread. Most people who accept cryptids as real do so because they feel that eyewitness reports simply have to count for something, namely something consistent with their preferred view of the cryptid in question. Because these views are changed or are even abandoned according to what’s learnt over time, these individuals cannot be labelled pseudoscientists, and claims that cryptozoology as a whole can be dismissed as pseudoscientific do not withstand scrutiny – as discussed in Chapter 1.

However, what’s notable is that believers tend to pick and choose their favoured cryptids in a fashion that’s more intuitive than evidence-based. To provide an example encountered among some sections of the cryptozoological community: the yeti is regarded as ‘acceptable’ due to the remote nature of its Himalayan home, while bigfoot is rejected due to the fact that North America is extensively populated and comparatively well explored. This sounds logical, but ignores the fact that there’s essentially no supporting evidence for the yeti and yet copious supposed evidence for bigfoot. Those who write about mystery animals as if they’re real, findable, flesh and blood creatures also mostly work by accepting accounts as credible purely because they sound consistent with what’s expected. Cases are linked together and interpreted within a given theoretical framework on the basis of intuition and a sense of what seems about right, not on any evidence that might withstand an appropriate amount of scepticism. Cryptozoological belief can therefore be criticized for being intuitive and unscientific.

Also conspicuous is that cryptozoological believers can often be quite accepting of non-cryptozoological topics broadly included within the umbrella of 'the paranormal', including UFOs, ghosts and lost continents. Some conferences and meetings that cover cryptozoological topics feature talks or presentations on mystery animals alongside those on orbs, ghosts, UFOs and so on, and some writers who cover cryptozoological topics also write widely (and sympathetically) about other mysterious phenomena. This venture into more 'fringe' topics is frowned upon by some biologically minded cryptozoologists.

A prominent example was the late Ivan Sanderson. He helped establish cryptozoology in the first place and was instrumental in developing ideas on cryptohominids, sea serpents and so on. Yet he also wrote and spoke about UFOs and was a proud Fortean – that is, a follower of Charles Fort. Fort wrote about all manner of unexplained phenomena and essentially argued that science dismissed or ignored the data (Fort called it 'damned data') that did not fit with those theories and ideas considered fashionable or acceptable at the time. This Fortean world-view – still popular among those interested in mysterious phenomena – is naive in not admitting that 'damned data' consistently proves to be bogus, confused or apocryphal when investigated. Science does not ignore or dismiss the sort of data Fort had in mind. Rather, it shows it to be so flimsy or poorly founded that it cannot be considered evidence of anything, let alone anything that might overturn our view of how the universe works. And, as noted above, Sanderson was not and is not alone.

Nevertheless, this link gives cryptozoology a bad reputation since those other subjects cannot be regarded as well founded or consistent with scientific understanding.

The link that exists between these unorthodox subjects in the minds of some researchers is informative, since studies by psychologists have shown that people who believe in the paranormal are more likely to interpret the phenomena they experience in nature as 'paranormal'. In other words, a view of the world inconsistent with scientific understanding promotes a belief in a world populated by monsters, ghosts and all manner of agents that do not really exist. It might therefore be argued that those with 'paranormal' leanings are destined to accept and promote the existence of cryptids, and to be comfortable with a world-view that is inconsistent with a scientific understanding or application of critical thinking and scepticism. 'Paranormal' believers are not playing the same game as those of us interested in science and in basing ideas on scientifically acceptable standards of evidence.

These statements linking paranormal belief with cryptozoology are far from universal and are inapplicable to many proponents of cryptozoology. For many people interested in cryptids, their interest is in real animals, and the constant linking of the subject with the paranormal is irksome and inaccurate. In 2009, journalist Mike Leggett attended a bigfoot conference and hoped to see 'crazy' talks where bigfoot was interpreted as an inter-dimensional shape-shifter or a psychic being that spoke regularly to beings from outer space. Instead, he was disappointed to find the conference-goers discussing ecological correlations, inferred territorial patterns and satellite tracking.

Several investigators have noted how the bigfoot research community consists predominantly of middle-class, middle-aged white men; this statement is not, of course, meant to describe *everyone* within this research community: it's a generalization. In his 2009 book *Bigfoot: the Life and Times of a Legend*, Joshua Blu Buhs linked a belief in bigfoot with a psychological desire to explore the wilderness, to hunt and to engage in adventures perceived as 'masculine'. It might be said that the cryptozoological community in general is dominated by these associations, as are certain other communities involving the intellectual pursuit of ideas and phenomena.

Does this mean that an inclination to believe in bigfoot is, again, linked with a psychological bias, not with the evidence-based view of the subject to which proponents say they are adhering? While it's important to note that there are always individuals who do not conform to any stereotype, psychological predisposition may well explain an adherence to belief in cryptids and may be *the* dominant factor in controlling who expresses an interest in mystery animals. Of course, these generalizations (or similar ones) may well go for sceptics, debunkers and people who have an interest but are not 'believers'. Some of us are inclined to be hunters, seekers or investigators, and some of us are not.

Cryptozoology as culture

Throughout this book, certain ideas about mystery animals – cryptohominids, lake monsters and sea monsters in particular – are linked to cultural ideas and stereotypes. This concept has been explored by several authors, most notably by Michel Meurger in *Lake Monster Traditions*. The main idea is that witnesses distort their recollected experiences (most often subconsciously) to match the set of concepts – a sort of cultural baggage – they carry with them. The principal criticism directed at this idea by cryptozoological literalists is that it's vague and airy, and little connected to the phenomenon whereby people claim to see real, flesh and blood animals. How might this process actually work?

Firstly, a large amount of cryptozoological investigation has involved the analysis of age-old accounts: sea monsters on maps, legends and folklore pertaining to water-dwelling monsters and other creatures different from those now recognized by science. The principle assumption of these researchers (namely Heuvelmans and his colleagues and followers) is that such accounts are merely mythified descriptions of encounters with real animals. If, supposedly, we strip away or ignore those parts of the accounts that seem obviously mythified, we find the real creature at the core of the account.

But the more we've learnt, the more unacceptable this assumption becomes. As discussed in Chapter 2, there are good reasons for thinking that the sea monsters depicted on medieval maps were invented for decoration or to make certain places look more frightening. They were not ever meant to be literal depictions of real animals. We saw in Chapter 3 that stories about dangerous lake monsters are consistently linked with ideas about lakes themselves that are patently untrue – involving bottomlessness, underwater tunnels, the lake refusing to give up its dead and so on. They also involve a gamut of differently shaped lake monsters that simply cannot describe one single type of creature. What's most likely is that lake monster stories are linked to adults' need to ensure dangerous bodies of water seem like frightening places and so make children stay away from them.

And in Chapter 4 we touched on the idea that beliefs in cryptohominids – of hairy wild people somehow halfway between the human world and the natural one – are a necessary and ubiquitous part of human cultures, with people worldwide believing in spirits or entities that are exact prototypes of such cryptids as the bigfoot or almas. Cryptozoological discussions of bigfoot often note that indigenous people have legends and stories consistent with the 'flesh and blood' view of this creature as an undiscovered hominid. But this is naive given that the accounts concerned mix 'bigfoot-like' features with human ones, and talk of wild forest people that are mostly nocturnal giants but otherwise combine all manner of traits regarding appearance, clothing, behaviour, odour or lack of odour, friendliness, aggressiveness, an ability to speak or lack of an ability to speak, and so on; the entities are at the same time person-like, animal-like, ghost-like, exist to perform actions like tree-felling or cannibalism, and inconsistent with Western ideals of a dichotomy between the 'real' and the 'unreal'.

Extracting from this tangled and diverse web of belief, superstition and lore the idea of a single, homogenous real-life primate species is misleading and unsatisfactory: it amounts to cherry-picking a few 'reasonable-sounding' traits while ignoring or disregarding the vast majority. Michel Meurger said of this phenomenon: 'It is inevitable that these Indian monsters ... provoke ... the desire to cut down, at any cost, the great tree of indigenous beliefs. Alas! Those who believe in separating "facts" from "superstitions" in order to find an unknown zoological creature under the tree's foliage risk reducing the tree trunk to the dimensions of a tooth pick before they have finished.'

In short, the belief that these sea, lake and man-like monsters should be 'de-mythified' is probably wrong. There are not real unknown animals to find here and they should remain within the context of folklore.

But if this is true, why do people continue to report sightings of these same creatures, right up to the modern day? How exactly does this cultural explanation work as an explanation for sightings of what are apparently flesh and blood creatures? This is a common complaint among cryptozoological literalists, their argument being that sightings from modern times really have to be interpreted as encounters with animals.

The fact is that we are all products of whatever culture we grew up in. No person is a blank slate who sees or experiences the natural world without first assessing, imagining, remembering or describing it through a kind of psychological filter – a set of ideas, ideals and concepts relevant to how we imagine the world to be.

Many of us can recall occasions where a dark shape in the water was interpreted as the back or body of a large, mysterious water creature, only for it to be resolved as an unusual wave, floating piece of debris or large fish. Similarly, unexpected figures or faces, witnessed in semi-darkness, turn out to be other people, or erect objects like trees, signposts or tricks of light and shadow. Other animals, like deer and cattle seen at unusual angles, bears and even large birds can and have been misinterpreted as humanoids when seen fleetingly or in less than ideal conditions. Furthermore, our ability to misinterpret, misunderstand, misremember and embellish what we see cannot and should not be underestimated. Remember that there is good empirical support for that last assertion: people have repeatedly proved to be *terrible* 'data recallers'.

Like it or not, we are all pre-programmed, as it were, to imagine giant, frightening creatures when witnessing a dark shape beneath the surface of the waves, and to see dark, human shapes in the shadows of forests and other wild places. This subconscious expectation of what the world is like is reinforced continually through our interactions with our culture.

Finally, it might be argued that these cultural concepts are irrelevant to cryptids since they have a sort of biological reality that demarcates them from cultural concepts and memes. The almas, for example, is not merely a vague, man-shaped idea, but a hominid that (allegedly) leaves physical traces, eats specific foods and can be allocated a possible position on the primate family tree.

But this ignores the fact that culture isn't static. On the contrary, it evolves constantly, discarding old motifs and incorporating new ones. Ideas about monsters change over time, just as do ideas and beliefs about everything. Sea monsters in several parts of the world changed from sea serpents to long-necked, paddled creatures after plesiosaurs became famous during the mid-1800s. And African monsters of the Congolese swamps and forests only became 'living sauropods' when images of what extinct sauropods were meant to look like flooded popular culture during the early 1900s. Most telling is that lake-dwelling monsters originally thought to be dragon-like creatures morphed into submersible machines made of nuts, bolts and steel plates during the late 20th century. Note that people spoke of seeing wooden airships and men with mechanical wings before metallic alien spaceships were ever reported. Go back further, and people claimed sightings of dragon-like flying monsters.

We tend to associate the idea of cultural imagery with our ancient forebears: with more superstitious times when our ancestors looked to signs in the sky or paintings on cave walls to know what the world was like and what might happen in the future. But a strong case can be made that we are just as much led by culture as ever. Whether we look at a cave wall or the screen of a smartphone, we absorb ideas and memes, we determine the shape of what we think of as reality and we carry psychological baggage that controls and affects our ability to perceive and describe the world. Many of us are unaware of this fact, unaware of the skill involved in basing conclusions on evidence rather than on inherent bias.

Before people began to report sightings of apparently sophisticated, metallic alien spacecraft in the 1950s, they claimed to have seen mystery airships or zeppelins. The 'mystery airship' shown here was supposedly sighted over Sacramento, California, in 1896. A good case can be made that encounters with mystery phenomena (including UFOs and monsters) track changes in culture and technology.

The cryptozoological research community

Those who do accept the existence of mystery animals as real are currently in an unusual situation. Such people want the study of mystery animals to be taken seriously, and they wish that more people – laypeople as well as scientists – would pay attention to the cryptids they believe in, and support and participate in relevant research. It's a common lament of the lake monster and bigfoot research community that more people would be convinced if only they would take the time to look properly at the evidence. But some of the people involved in this community also argue that academics and sceptics of cryptozoological evidence are uninterested, biased elitists, or are cowardly and more concerned with job security and a boring life. It is not at all difficult to find insultingly negative statements being made about sceptics of cryptozoology in the mystery animal literature. These disparaging remarks can betray a naivety about scepticism and those who adopt this sceptical approach.

Over time, scientists have become increasingly sceptical about the possible existence of cryptids for very good reasons. The number of qualified zoologists prepared to endorse or investigate their existence reduces by the decade. This isn't because mainstream scientists have been blinkered, cowardly or uninterested. In fact, the history of mystery animal research shows that mainstream scientists have engaged significantly with ideas about cryptozoology, both promoting the existence of such creatures when they thought the evidence was reasonably good (this goes for Thomas Huxley's writing about sea monsters from the 1890s) and examining and investigating them when intrigued and curious. A declining level of support for the existence of mystery animals comes from the failure of the field to produce evidence that might be convincing or compelling, not to intellectual bias or laziness on the part of scientists.

But none of this means that cryptozoology is dead. Firstly, reports of many mystery creatures are still worthy of investigation. They might not always include the superstars of the field like bigfoot and Nessie, but they're exciting and interesting nonetheless. It remains to be determined whether there's any validity to the accounts and observations involving a reddish, bipedal ape from Sumatra called the orang pendek. This is a case in which qualified primatologists (such as orangutan expert John MacKinnon) have encountered evidence that they thought might be support for the creature's existence, and the observations at least occur in a place where large unknown animal species might still occur.

Secondly, the fact that the study of mystery creatures might be more to do with culture, folklore, human psychology and people's behaviour and performance as observers and 'data recallers' should not diminish the value of the field. It means that there is still a fascinating subject worthy of analysis, albeit a different and more complex analysis than cryptid hunters attempt. Of course, it remains a matter of personal taste whether these areas are more interesting than the idea that mystery creatures are purely within the realm of zoology. There’s no doubt that some people interested in cryptozoology are strongly attached to the idea that their favourite mystery animal exists and are uninterested in the concepts of psychology and culture touched on here. As we’ve seen, however, the evidence, such as it is, just cannot be taken as support for the ‘flesh and blood’ view. We’ve moved from ‘searching for hidden animals’ to ‘searching for reasons why people believe in hidden animals’.

So is cryptozoology – if that’s really the name we should be using for this field of study –utterly divorced from zoology, and really more to do with sociology, psychology and folklore? The reason this is so difficult to answer is that ‘cryptozoology’ is a messy umbrella of a subject that involves all of these things. We’re selling the field short if we assume otherwise. Some mystery animal reports can only be evaluated within a zoological context, others might be entirely folkloric and others still are a complex blend of both things: accounts of real animals that have been interpreted within a cultural context.

The study of mystery animals is not dead: there are still an enormous number of zoological mysteries that warrant investigation and could well bear scientific fruit. But the superstars of cryptozoology – the cryptohominids, lake monsters, sea monsters and so on discussed in this book – are almost definitely not phenomena with a zoological answer. This is an exciting time, and a huge amount of research remains yet to be done.

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Chapter 7

My views on the nature of cryptozoological 'belief' come from years of attending cryptozoological meetings (in particular the Centre for Fortean Zoology's Weird Weekend events, *Fortean Times*' UnConvention, the Big Cats in Britain conferences, and the Zoological Society of London event Cryptozoology: Science or Pseudoscience?), and years of speaking to and corresponding with people who identify themselves as cryptozoologists. The mention of interdimensional portals and cryptids as time travellers comes from Bord & Bord (1980, 1989). The study on belief in the paranormal is Sharps *et al*. (2010). Leggett’s article on bigfoot conferences is no longer available online, but is quoted in full at http://tinyurl.com/qzjjduk. The discussion of indigenous North American ideas on sasquatch-like creature is based on Suttles (1987). The Meurger quote comes from page 165 of Meurger & Gagnon (1988). For an overview of the reliability (or otherwise) of eyewitness evidence, see Rabbit (2000).

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